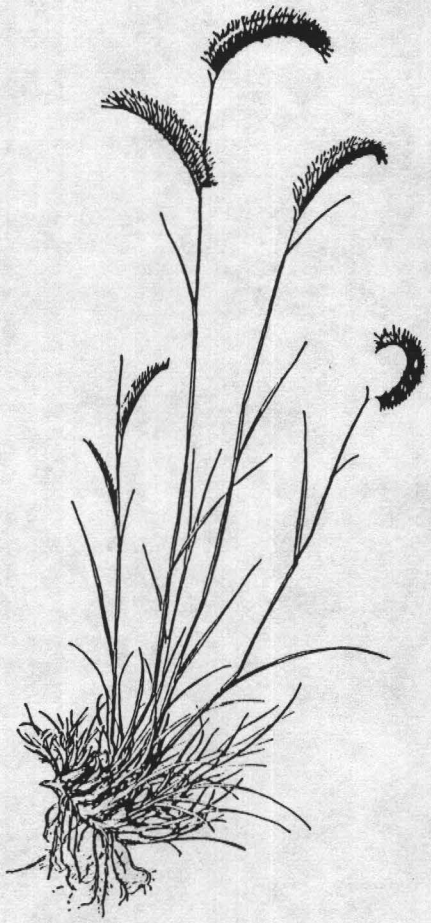
8/24/92

TOIYABE NATIONAL FOREST

LAS VEGAS RANGER DISTRICT

WILD HORSE AND BURRO REVIEW



August 24, 1992

WILD HORSE BRIEFING PAPER

LAS VEGAS RANGER DISTRICT

TOIYABE NATIONAL FOREST

August 24, 1992

Welcome to the Las Vegas Ranger District. This packet is provided for your information and convenience. The packet is divided by section to facilitate discussion of specific topics.

Sara / Wildlife Biologist
Juan - Palmer - Toiyabe Nat Forest

Regs definition of "range"

Budget - FY 92 now (base level for 95 programming)
94 going thru OMB now; will go to President.

Packet Contents Section

HISTORY

Prior to the passage of the Nevada Enhancement Act in October of 1988, the Las Vegas Ranger District did not provide forage or grazing for either domestic livestock or wild-free roaming horses and burros. Occassionally, wild horses and domestic livestock did enter, occupy, and graze National Forest System lands. The majority of the wild horse use occured between Kyle Canyon and Macks Canyon with the greatest use occurring in Lee Canyon on a small meadow and the vegetated ski slopes of Ski Lee.

In an effort to eliminate this use a drift fence was constructed across the mouth of Lee Canyon. This fence did provide some control for about 10 years.

In April of 1989, the district obtained portions of 7 grazing allotments plus one allotment in entirety. Of these 8 allotments only one was considered as perennial grazing. The remaining allotments were clasified as ephermeral range. Three of the allotments had active preference at the time of transfer. One of these permits has expired and the remaining two permits will expire in 1993.

The information on wild horse and burro territory boundaries, population levels and AML's is inconsistent and confusing.

HIGH PRIORITY ISSUES

2. To what extent is management direction for wild horses and burros covered in Forest Land Management Plans? What is the adequacy of this direction as expressed in forest plan standards and guidelines?

- The Toiyabe LMP requires the continuing exclusion of wild horses and burros in the management areas comprising the original ranger district.

- Language contained in the Nevada Enhancement Act requires the district to manage wild horses and burros under the existing BLM plans where those plans address the specific activity.

  The MFP contains the following direction:

  1. The MFP calls for management numbers (AMLs) to be the 1983 population level.

     The MFP goes on to say, "It is probably difficult, if not impossible, to accurately determine where the animals were located in 1971 with any degree of accuracy. Bureau regulations call for management of 'desirable' numbers of animals as part of the ecology of the public lands. As with wildlife, permitted expansion of habitat or its reduction, should be by mangement decision based on resolved resource conflicts."

The document also states that aerial and fixed wing aircraft were used to conduct census inventories to determine areas used by wild horses and burros as all or part of their habitat on December 15, 1971. These flights to determine the extent of areas used were conducted for three years in 1973, 1974, & 1975.

The DRAFT Resource Management Plan states:

1. "(Herd Areas were delineated in 1972 as required by P.L. 92-195. Herd Management Areas were designated by the Clark County MFP (1984) and the Esmeralda-Southern Nye RMP (1985)."

2. Table 2-9 identifies Red Rocks HMA, Lucky Strike HMA, Johnnie HMA, and Trout Canyon HMA. These HMA's do not correlate to either the 1975 map or the MHA's identified in the MFP.

3. Table 2-9 also sets initial herd sizes (AMLs) and estimated herd sizes as follows:

Red Rocks	35 horses 60 burros	50 horses 60 burros
Lucky Strike	50 horses 50 burros	50 horses 50 burros
Johnnie	195 horses 150 burros	185 horses 150 burros
Trout Canyon	10 horses 10 burros	10 horses 10 burros

The DRAFT RMP contains the following direction:

1. "Limit utilization by all herbivores on key perennial species in key areas within HMA's to 55 percent of the current year's production".

2. "Develop and maintain dependable water sources for the wild horses and burros found on the public range".

3. "Gain more specific management capability and control over the wild horse and burro populations in the Spring Mountains, through realignment of the HMAs in the area".

Discussion:

Both the Forest Service and BLM regulations provide that territories or herd areas are geographic areas identified as being habitat for wild horses and burros in 1971. As previously described the BLM conducted flights in 1973-1975 to determine the habitat being used by wild horses and burros. The habitat identified in the succeding years after 1971 may not have been habitat on the date of enactment of the Act.

The regulations provide the following dilema:

Territory Boundaries:

Preliminary maps and data indicated that three territories (HMA's) were involved in the transfer of lands. These territories were Spring Mountain, Mt. Stirling, and Jackpot.

Confusion over the territories and boundaries was further heightened after review of the DRAFT BLM Resource Management Plan. Under this plan the BLM identified and proposed 4 territories located on and in proximity to National Forest System lands. The RMP identified the territories as Johnnie, Lucky Strike, Red Rocks, and Trout Canyon.

In follow-up conversations with Terry Driver, he indicated that the four territories identified in the DRAFT RMP are the actual original territories delineated in 1971 and that the maps received with enhancement were proposed adjustments to the original boundaries.

Terry Driver then provided a map dated 1975 which identified 3 wild horse territories, ie., Mt. Stirling-Wallace Canyon, Lucky Strike, and Red Rock-Bird Spring. Also in 1975 the map indicated 4 burro territories, ie., Last Chance, Lucky Strike, Mt. Potosi, and Blue Diamond. Of these burro territories portions of three overlap onto National Forest System lands as a result of enhancment.

Hence the dilema. What are the legal boundaries of each territory designated in 1971 and what are the names?

Second, the district has begun the process of preparing a territory management plan for the Spring Mountain territory and now we don't know if it really exists. We can modify our NEPA scoping documents if we can get clarification of exact names and boundaries.

Third, the BLM map as presented in their DRAFT RMP indicates that the Old Las Vegas Ranger district (pre-enhancement) was part of the territories designated in 1971. This in not the case. The original 58,000 acres are not part of a designated territory and wild horse use of the old district is not authorized.

Population Levels:

Population census was last obtained in 1988 by aerial reconanissance. The information presented does not provide data in a usable form for planning purposes. Wild horse numbers obtained in the Spring Mountain-Mt. Stirling area were combined. Depending on the status of the real territory boundaries this information may be more useful. The BLM is conducting a new aerial census at this time. However, they do not have the money to conduct aerial census of the National Forest System lands involved with these territories. Information obtained from this census will provide some

indication of numbers on the National Forest but will not be very reliable. The horses tend to find cover in the heavy pinyon/juniper and higher elevations to help escape the summer heat and are therefore difficult to census with a high degree of accuracy.

AML's:

This issue needs clarification. What are the AMLs? The numbers occupying the territories in 1983 as identified in the MFP or the numbers presented in the DRAFT RMP?

3. To what extent and how are the needs of both domestic livestock and wild horses and burros considered in the establishment of grazing capacities within the territory and allotment management planning process?

- This issue raises significant questions on the district. There are two active (preference) allotments. One of these allotments is classified as ephermeral/perennial range, and the other is classified perennial. Preference numbers for the Wheeler Wash allotment is 100 head and for Mt. Stirling 125 head.

  The law specifies that wild horses and burros be managed in a wild free-roaming nature. The LMP requires that rest-rotation grazing systems be developed and implemented. The district has inadequate information at this time to determine exact band territories. Fencing may disrupt band movement.

- The district's forage base is primarily browse. The district has proposed to conduct a three-year utilization study, including use mapping with fecal analysis sampling to determine what types of forage and percent of that forage is being used by wild horses and burros, elk and deer, and livestock. The advantage of such information is:

  a. identification of dietary overlaps and areas of direct competition which will provide for a scientific selection of key bench mark areas.

  b. provide a basis of partitioning available forage and water to all classes of ungulates.

- To implement livestock grazing and a rest-rotation grazing system will involve a large expense in fencing. We estimate a total fencing cost of approximately $60,000 dollars to implement LMP direction for grazing systems. The permitted livestock numbers hardly warrant such an expense.

7. Do we have good relations with the BLM in the field? What if anything, needs to be done to improve relations?

- The district believes there is need for improvement. Relations have improved over the past several years but there still seems to be some bitterness because of enhancement.

The DRAFT RMP states that the document was prepared with consultation of the Forest Service. This is not accurate. The proposed actions and decisions contained in this DRAFT were developed without any local participation. In an effort to correct these problems the district has set up a meeting with the BLM planning section to address specific concerns.

One concern has already been identified. What are the true boundaries? Questions of boundaries and population numbers would not be issues if good communications were occurring.

The district is still trying to obtain information which the BLM has stated they have in relation to use mapping and utilization studies on lands transferred by enhancement. This information was supposed to have been provided with the records transferred as a result of the Enhancement Act.

- The district suggests that when managing wild horse and burro territories/HMAs where lead is assigned to one agency, that each agency participate in all field studies such as use mapping, utilization studies, censusing, etc. After completion of these joint efforts each agency representative prepares the report. This identical report is then recorded in each agencies official files.

  Implementation of this type of effort would develop a stronger relationship between the agencies, and would provide a unified information source to the public. By so doing each agency would be supporting the other's resource decisions.

8. Is present coordination and communications with the BLM adequate? If not, what specific measures need to be accomplished to strengthen our coordination?

- A perfect example is occuring while we are participating in this review. The BLM is conducting a census flight of their portion of the HMAs. The Forest Service does not have money to participate in this effort to obtain census numbers on the National Forest. The BLM does not have money to census National Forest System lands. The BLM will go forward and begin preparation of managment plans with current census numbers. The district will have to interpolate from the census information and combine it with physical sightings from vehicles to determine our best guess at populations numbers on National Forest System lands.

- Another example is the district has a target to complete a territory managment plan for the Spring Mountain territory. As previously discussed, is there a Spring Mountain territory? It is imperative that the BLM and the Forest Service do consistant outyear planning where they share joint management responsibility for territories/HMAs. By doing joint outyear planning each agency could make much better use of continually shrinking federal budgets and provide for better planning and mangement of wild horses and burros.

9. In light of the BLM strategic planning efforts, what coordination measures need to be strengthened to insure consistency in approach to implementing identified actions.

- As previously mentioned, joint outyear planning and budgeting would be benefical to both agencies to make the most of shrinking federal budgets. This process would provide for increased coordination and understanding and implementation of the strategic plan.

10. Are the National Forests in Nevada in agreement with the selective removal strategy in the BLM's draft strategic plan to reach desired wild horse and burro population levels on all territories within a six-year time-frame?

- The district generally supports the strategic plan. There is concern over the age limits for adoption. Identified problem horses which find their way into non-horse or burro areas should be identified and subsequently removed regardless of age. The remainder of the strategy appears to be well thought out and implementable with adequate funding.

11. To what extent should the Forest Service adopt the program goals and objectives of the BLM's current strategic planning effort for management of wild horses and burros on public lands? How should this be accomplished?

- Basically the same response as to question above. However, there is concern over the approach to return animals to territories/HMAs where populations are below appropriate management levels. In many instances adding horses to areas not occupied or below AML may contribute to other resource problems, ie., there are few wild horses and burros in Lovell Canyon. Under this policy excess horses could be moved to that area. This would increase administration problems with horses entering and using private lands, would greatly increase the potential for horses entering the horse-free area of the original district, that is the wilderness area and the Carpenter Canyon Research Natural Area.

12. What are the funding and budgeting levels that will be needed to provide adequate coordination with the BLM to implement the Nevada strategy?

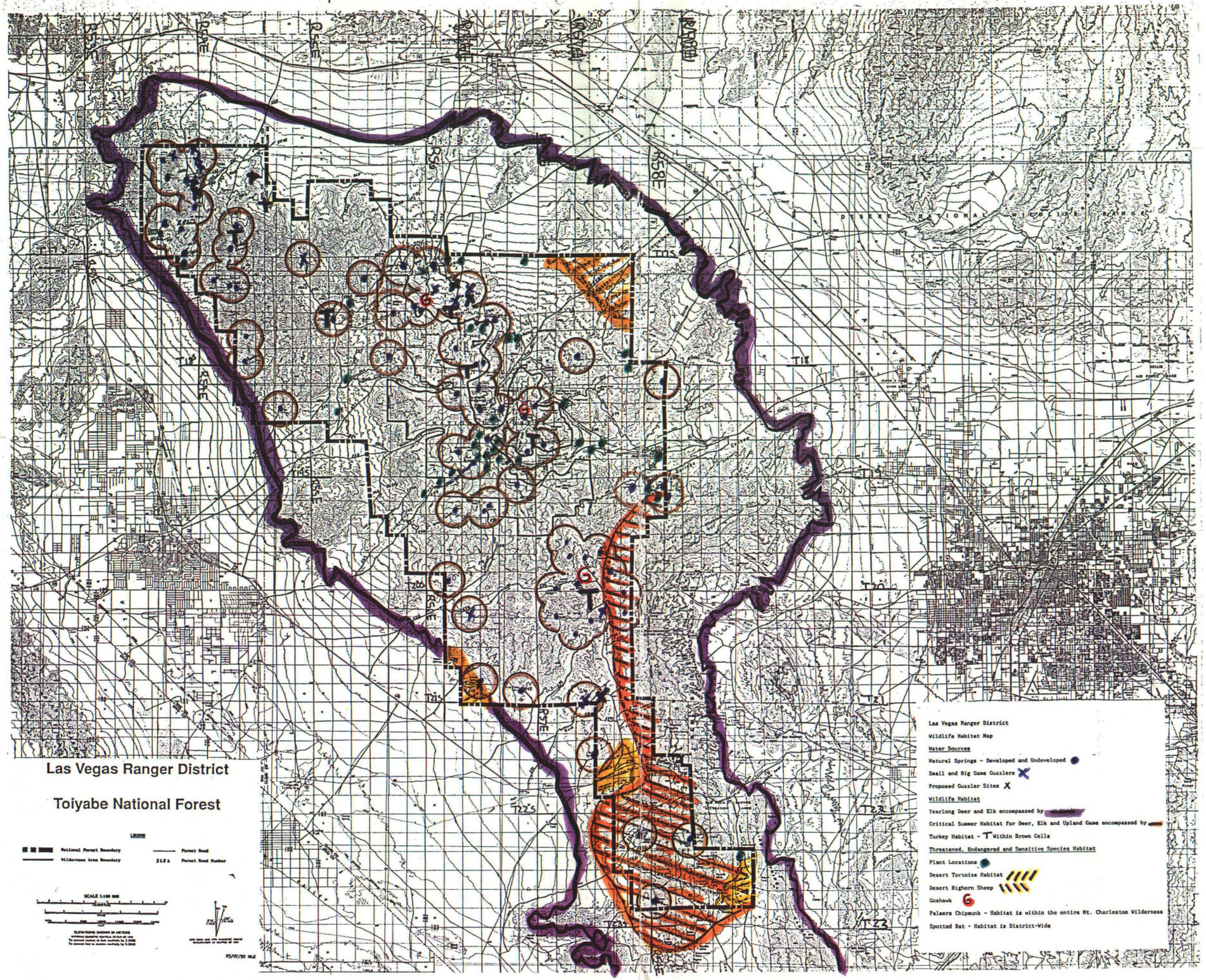
- The Las Vegas Ranger district would anticipate the need for one full time position, a census flight every three years, vehicle with horse trailer, horse, and depending on the final determination of boundaries a removal every three years as provided for in the stragtegic plan on however many territories are finally established.

13. What work remains to complete the assignment of lead agency for all jointly managed territories within the state of Nevada?

- The Las Vegas Ranger District and the Stateline Resource Area need to complete an agreement to assign lead agency. Discussion in the past has centered on most acreage to determine lead (BLM position) and which agency has the most year round use by wild horses or burros (F.S. position). Use is greatly influenced by water and the majority of water sources are on National Forest System lands.

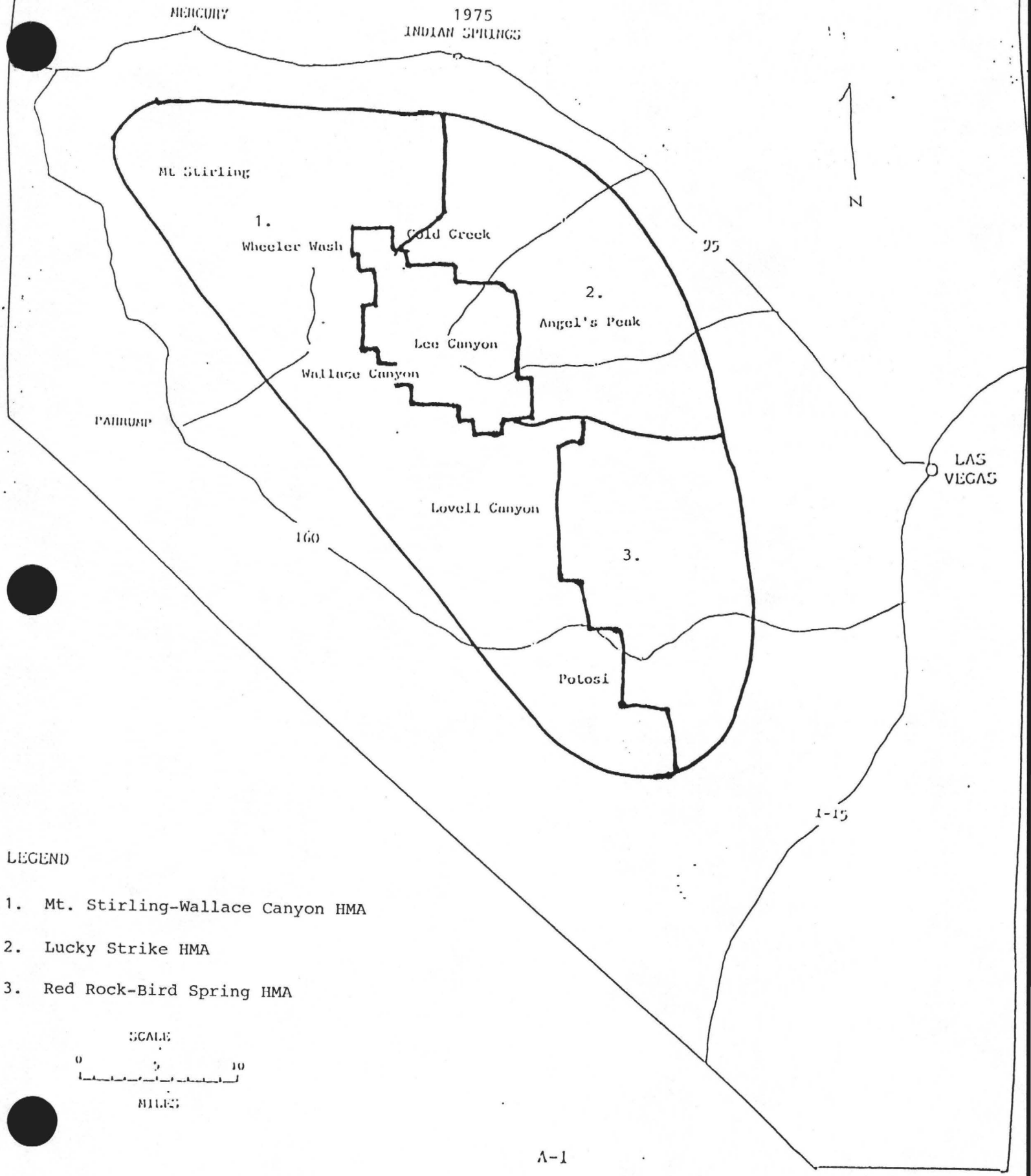
- In addition, the acreage position appears to be being manipulated with the constant changes and fluctuations in territory boundaries.

- In reality, if both agencies adopt the proposal suggested in response to items 7 and 8, lead becomes a real shared vision.


Las Vegas Ranger District
Toiyabe National Forest
LEGEND
National Forest Boundary
Wilderness Area Boundary
Forest Road
Forest Road Number
SCALE 1:100 000
ELEVATIONS SHOWN IN METERS
03/01/90 MLO
Las Vegas Ranger District
Wildlife Habitat Map
Water Sources
Natural Springs - Developed and Undeveloped
Small and Big Game Guzzlers
Proposed Guzzler Sites X
Wildlife Habitat
Yearlong Deer and Elk encompassed by
Critical Summer Habitat for Deer, Elk and Upland Game encompassed by
Turkey Habitat - T Within Brown Cells
Threatened, Endangered and Sensitive Species Habitat
Plant Locations
Desert Tortoise Habitat
Desert Bighorn Sheep
Goshawk G
Palsers Chipmunk - Habitat is within the entire Mt. Charleston Wilderness
Spotted Bat - Habitat is District-Wide

Stateline Resource Area
Wild Horse Herd Management Areas

1975



LEGEND

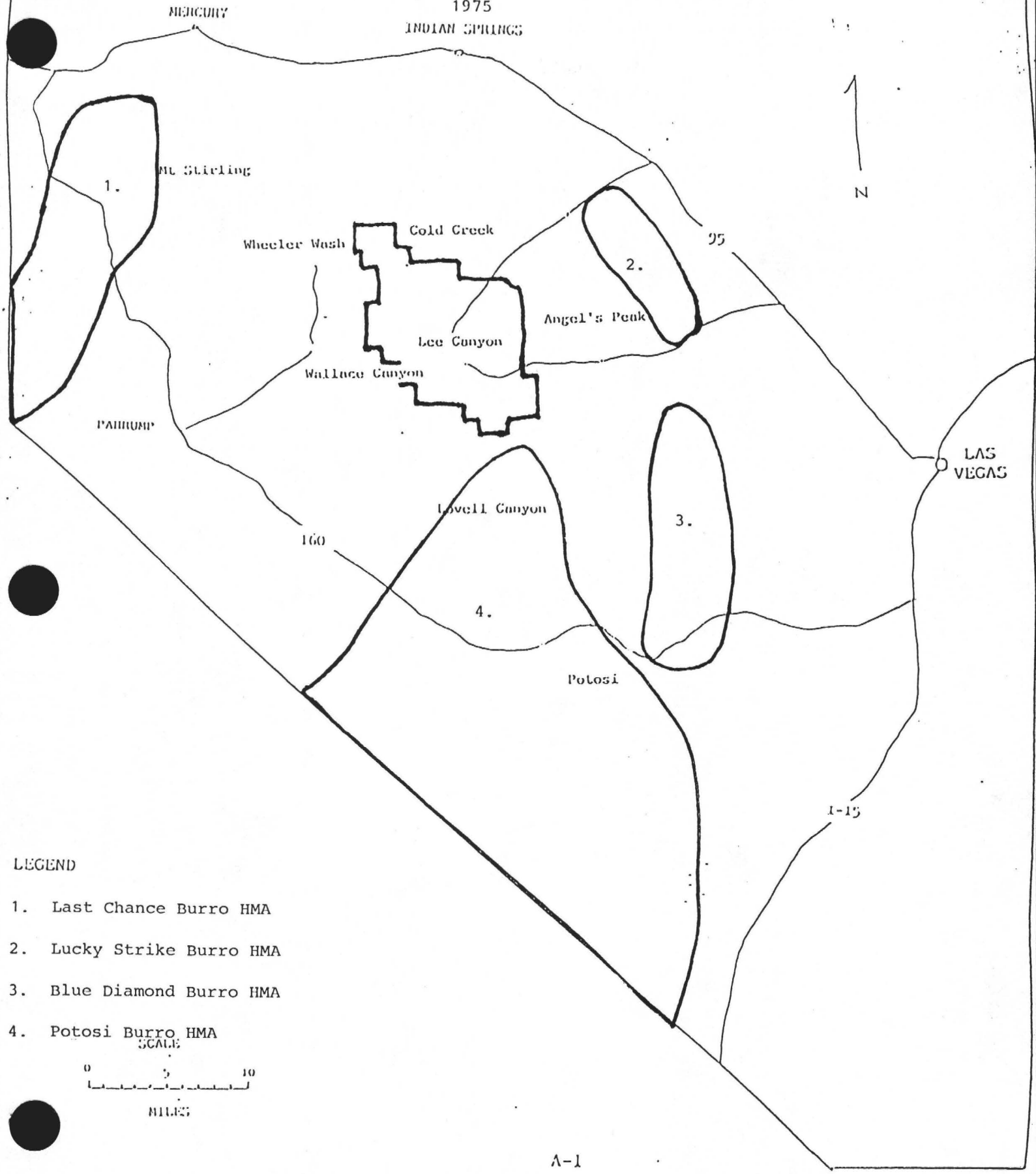
1. Mt. Stirling-Wallace Canyon HMA
2. Lucky Strike HMA
3. Red Rock-Bird Spring HMA

SCALE

0 5 10

MILES

Stateline Resource Area
Wild Burro Herd Management Areas
1975



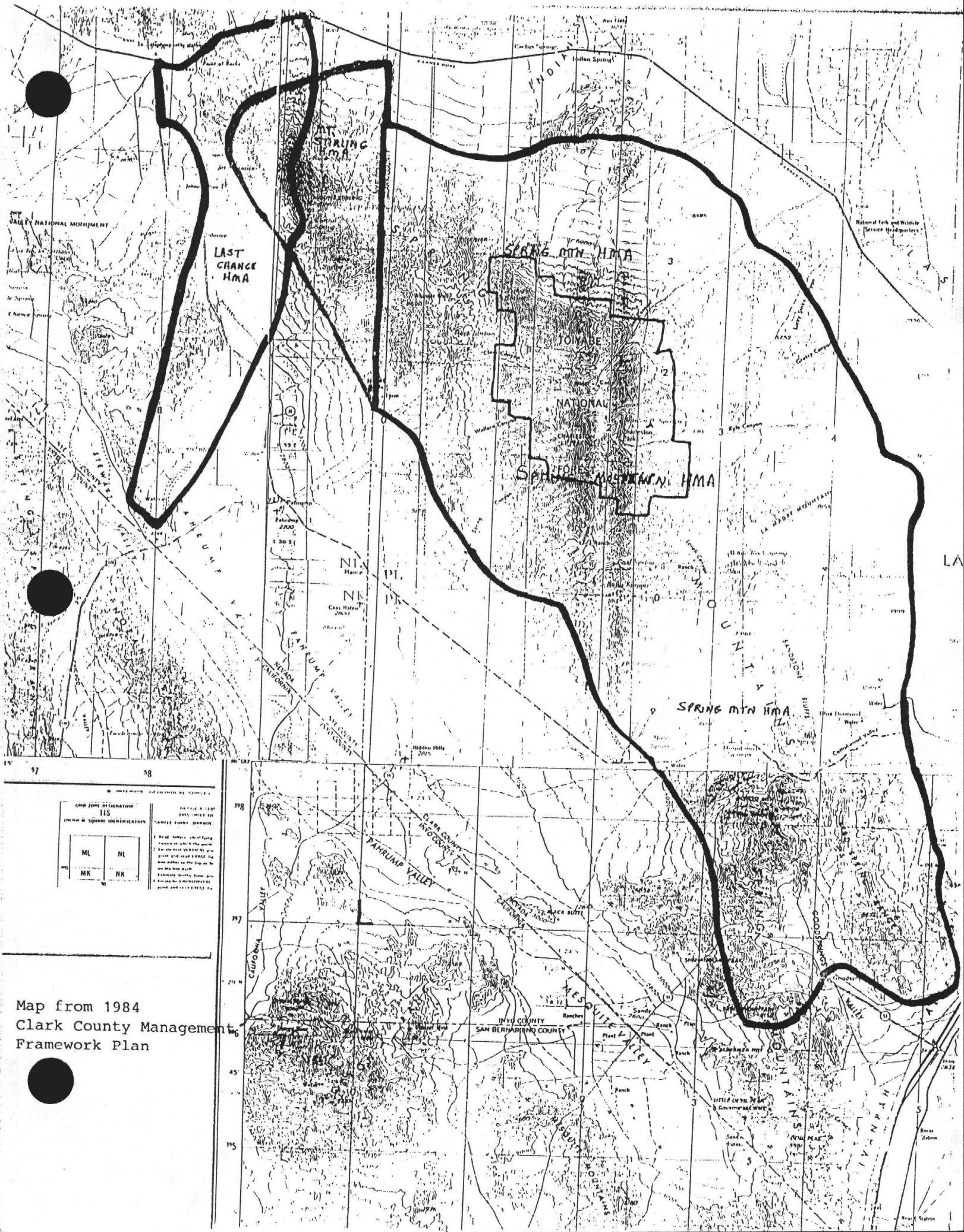
LEGEND

1. Last Chance Burro HMA
2. Lucky Strike Burro HMA
3. Blue Diamond Burro HMA
4. Potosi Burro HMA

SCALE

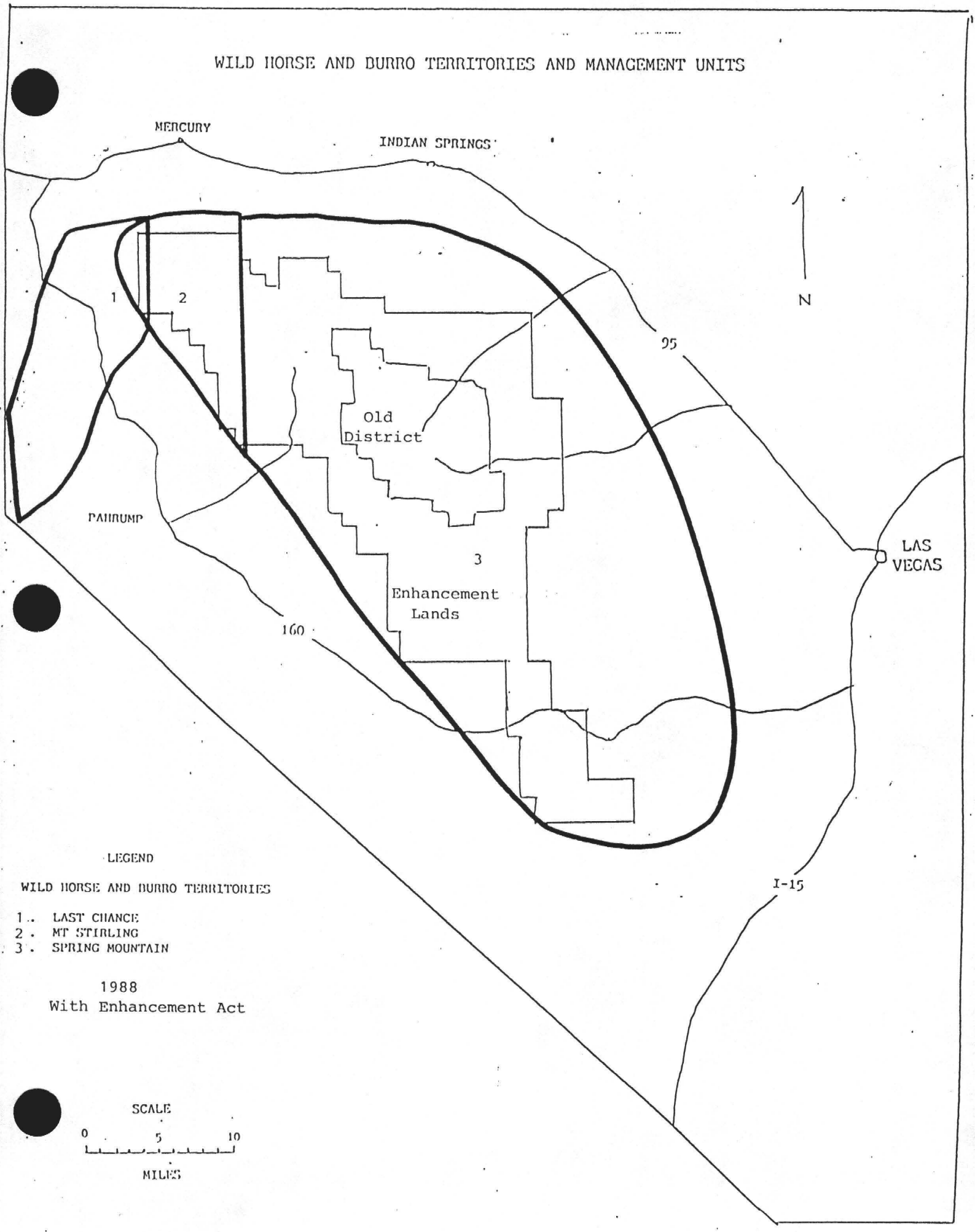
0 5 10

MILES

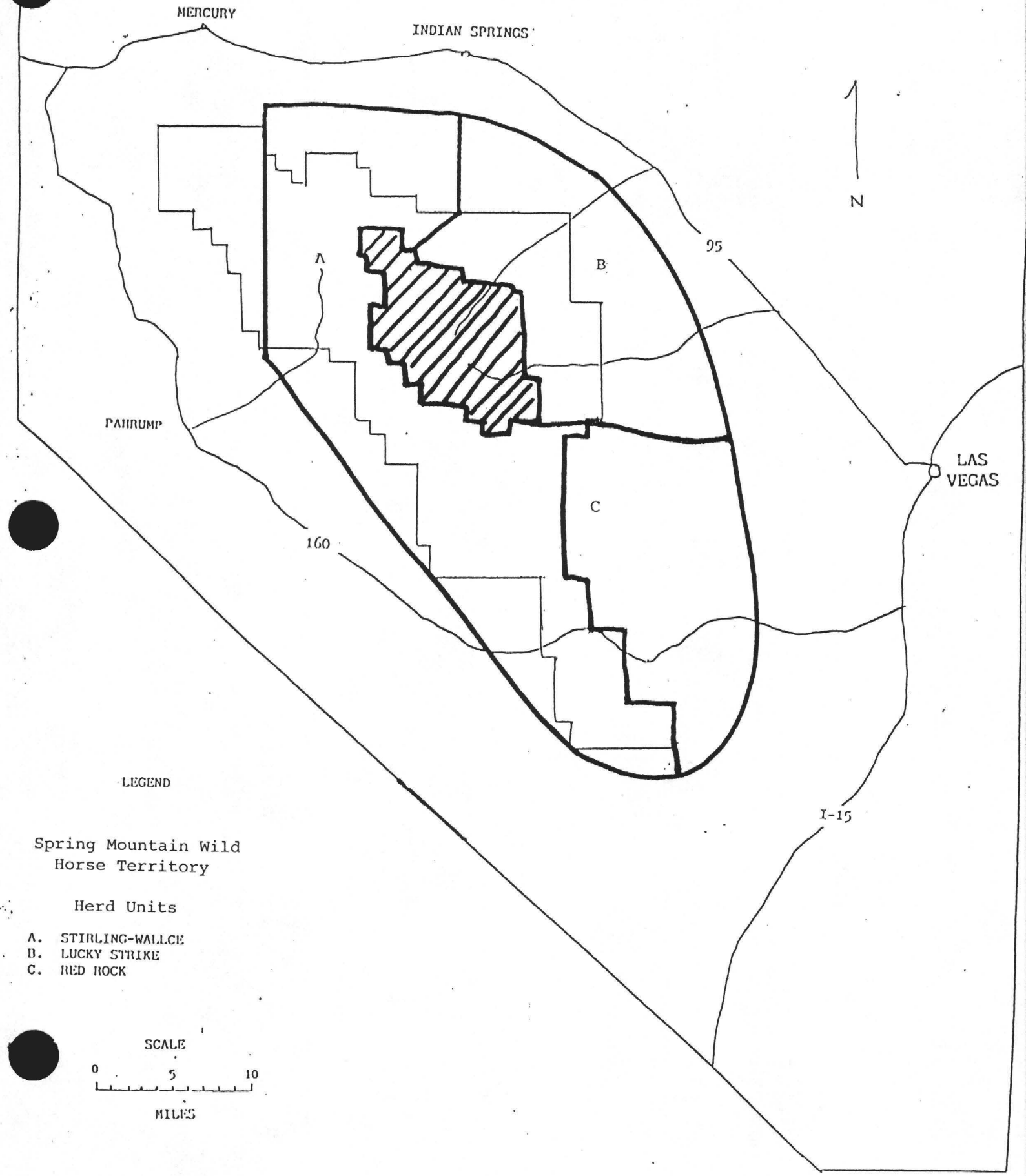


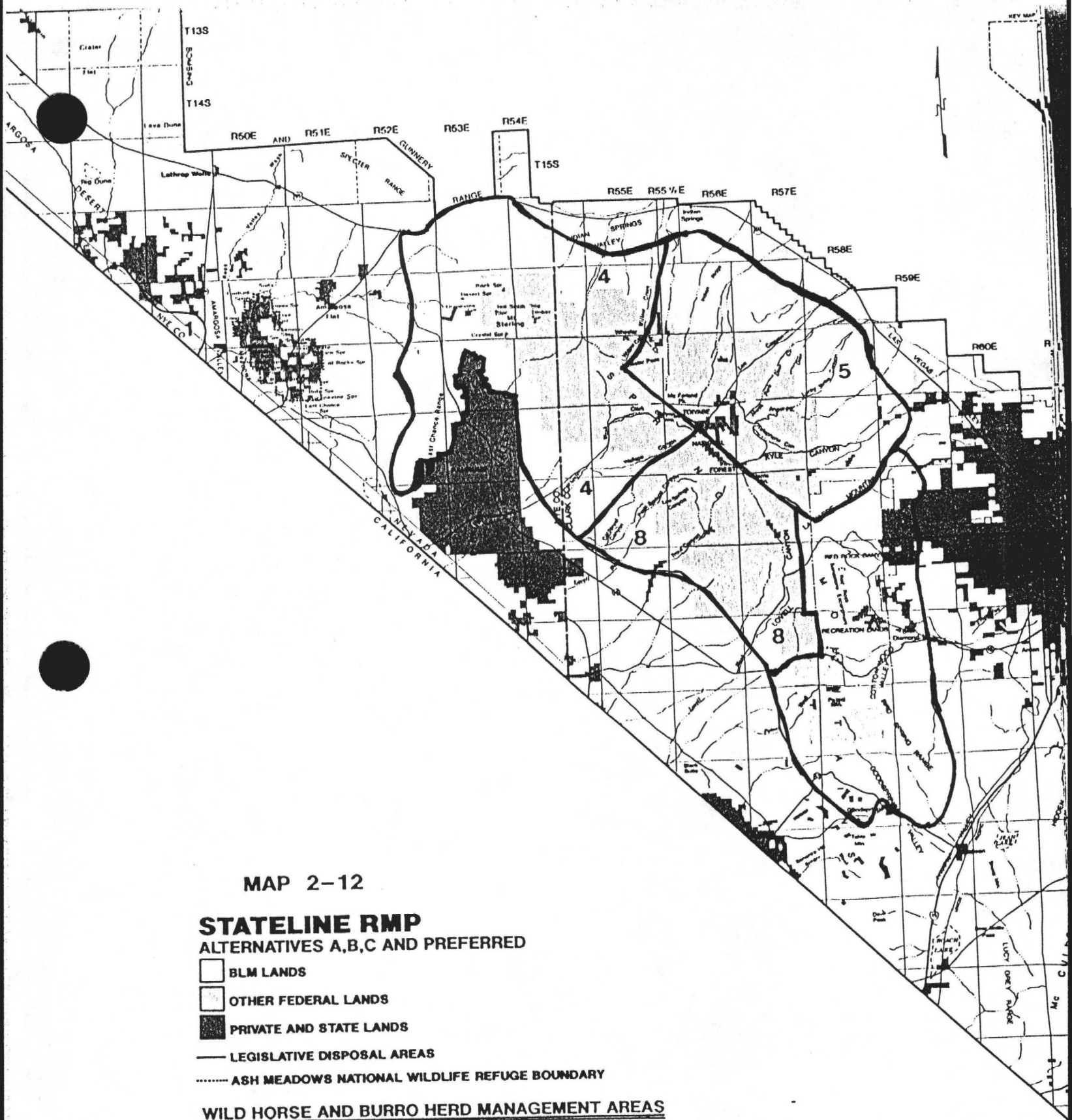
Map from 1984
Clark County Management
Framework Plan

WILD HORSE AND BURRO TERRITORIES AND MANAGEMENT UNITS



WILD HORSE AND BURRO TERRITORIES AND MANAGEMENT UNITS





MAP 2–12

STATELINE RMP

ALTERNATIVES A,B,C AND PREFERRED

- BLM LANDS
- OTHER FEDERAL LANDS
- PRIVATE AND STATE LANDS
- —— LEGISLATIVE DISPOSAL AREAS
- ..... ASH MEADOWS NATIONAL WILDLIFE REFUGE BOUNDARY

WILD HORSE AND BURRO HERD MANAGEMENT AREAS

1. AMARGOSA
2. ELDORADO
3. GOLD BUTTE
4. JOHNNIE
5. LUCKY STRIKE
6. MUDDY MOUNTIANS
7. RED ROCKS
8. TROUT CANYON

VEGETATION DATA FORM - Page 1

Mole No: 46 Aerial Photo No. LV 10-540
Examiner(s): Mayben / Donaldson Date: 8/5/92
Land photo: (Y) (N) USGS Quad.: MT STARLING 15 min
Forest: Toiyabe District: Las Vegas County/St.: Clark / NV
Twp: 19S Rge: 55E Sec: 30 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: Spring Mtn Drainage: Clark Canyon Drainage
Elev.: 5006 Aspect: 210° Slope: 5% Position: Mid
Landform: Alluvial Fan Configuration: Smooth
Geologic material: Limestone Parent material: Alluvium
Soil name:
Site: Aquatic ____ Riparian ____ Upland X
Disturbance: Cattle X Sheep ____ WH&B X Deer X Elk ____ Antelope ____
Fire ____ Flood ____ Stream erosion ____ Nonstream erosion ____ Other X People

photos 20 & 21

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland ___ c. Shrub X
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland.a. Evergreen ___ Deciduous ___ Mixed ___
   Shrub.....a. Tall ___ Low ___ Mixed X
   Herb.....a. Perennial ___ Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed ___

STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
Dominant species		CORA	
2. Co-dominant species		YUBR	
3. Ave. height of layer		.5m	

C. STAND NAMING

1. Present vegetation series (from Bradley): CORA - YUBR
2. Present vegetation association: CORA-YUBR
3. Probable PNC: CORA-YUBR

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform X Fairly uniform ___
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up X Down ___ Not apparent ___
4. Suitability (grazer WH&B): Suitable
5. Remarks: MESP, EPNE, EPVI, YUBC, GUSA, Cholla, Winterfat
   Old Wild Horse sign frequent, patrolling along transect
6. Cover and use:

Annual Production 200 lbs/acre
029XY019NV
M/b Winter use area

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	20	5	20	25	10	20	35	30	35	10	210	21
% Litter	15	†	30	20	20	15	15	10	20	5	150	15
% ~~Cryptogams~~	45	50	35	20	30	25	30	30	30	40	335	33
% Pavement	20	40	15	30	30	35	15	25	15	40	265	27
% Rock		5		5	10	5	5	5		5	40	4
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 46

By Mayben / Sovacool Date 8/5/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	
4. Browse species showing little or no hedging.	X	4. Browse species showing heavy hedging.	

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.		2. Soil movement detectable.	X
3. Soil cover continuous and intact.	X	3. Soil cover broken and soil exposed.	
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Plot No: 45 Aerial Photo No. LV 10-542
Examiner(s): Moyben / Sandoval Date: 8/5/92
Land photo: (Y) (N) USGS Quad.: Mt Sterling 15 min
Forest: Toiyabe District: Las Vegas County/St.: Clark / NV
Twp: 19S Rge: 55E Sec: 20 Lat: _____ Long: _____
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: Spring Mountain Drainage: Clark Canyon
Elev.: 5300 Aspect: 160° Slope: 60% Position: Mid
Landform: foothills Configuration: undulating
Geologic material: limestone Parent material: limestone alluvium
Soil name: _____
Site: Aquatic ____ Riparian ____ Upland X
Disturbance: Cattle X Sheep ____ WH&B X Deer X Elk ____ Antelope ____
Fire ____ Flood ____ Stream erosion ____ Nonstream erosion X Other ____

photos 18 & 19

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland ___ c. Shrub X
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland. a. Evergreen ___ Deciduous ___ Mixed ___
   Shrub..... a. Tall ___ Low X Mixed ___
   Herb..... a. Perennial ___ Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed ___

STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species	_____	CORA	_____
2. Co-dominant species	_____	YUBR	_____
3. Ave. height of layer	_____	.5m	_____

C. STAND NAMING

1. Present vegetation series (from BRADLEY): CORA-YUBR
2. Present vegetation association: CORA-YUBR
3. Probable PNC: CORA-YUBR

Annual Production 200 lbs/acre

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform X Fairly uniform ___
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up ___ Down ___ Not apparent X
4. Suitability (grazer WH & B): Unsuitable
5. Remarks: MESP, Stipa, PRFA, EPNV, EPVI, WH trail & fecal sign few

029XY019NV

6. Cover and use:

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	15		10		25	15		10		25	100	10
% Litter	5	5		5		5	5		5		30	3
% ~~Cryptogams~~	25		30	35	35	25		30	35	35	250	25
% Pavement	35	20	35	20	30	35	20	35	20	30	280	28
% Rock	20	75	25	40	10	20	75	25	40	10	340	34
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 45

By Mayben/Sanocool Date 8/5/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	
4. Browse species showing little or no hedging.	X	4. Browse species showing heavy hedging.	

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.		2. Soil movement detectable.	X
3. Soil cover continuous and intact.		3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed.[1]	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

Normal ?

[1] At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Photos 5+6

Plot No: 57 Aerial Photo No. LV-11-498
Examiner(s): Mayben/Savaaal Date: 8/7/92
and photo: (Y)(N) USGS Quad.: Mt Stirling
Forest: Toiyabe District: Las Vegas County/St.: Clark NV
Twp: T19S Rge: 55E Sec: 17 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: Spring Mtn Drainage: Wheeler Wash
Elev.: 5600 Aspect: 140° Slope: 5% Position:
Landform: Wash Configuration: Concave
Geologic material: Limestone Parent material: alluvium
Soil name:
Site: Aquatic ___ Riparian X Upland ___
Disturbance: Cattle X Sheep ___ WH&B X Deer X Elk ___ Antelope ___
Fire ___ Flood X Stream erosion X Nonstream erosion ___ Other X People

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland ___ c. Shrub X
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland..a. Evergreen ___ Deciduous ___ Mixed ___
   Shrub.....a. Tall X Low ___ Mixed ___
   Herb.....a. Perennial ___ Annual X Mixed ___
   b. Tall ___ Low X Mixed ___
   c. Grass/Grasslike ___ Forb X Mixed ___

STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
Dominant species		ARTR	
2. Co-dominant species		CHNA	
3. Ave. height of layer		1m	

C. STAND NAMING

1. Present vegetation series (from Bradley): Riparian
2. Present vegetation association: ARTR-CHNA
3. Probable PNC: ARTR-CHNA

Annual Production 400 lbs/acre

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform ___ Fairly uniform X
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up ___ Down ___ Not apparent X
4. Suitability (grazer WH&B): Suitable
5. Remarks: TIDS few along wash edge, EPNV, EPVI, Cholla DRFA, EAPA, WHSI Sh frequent but > 6 mons old
6. Cover and use:

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	/	15	30	5	t		5	/	/	/	55	6
% Litter		20	40	5	25		10	5	5	15	125	13
% ~~Cryptogams~~	35	60	25	65	50	10	80	40	40	30	435	43
% Pavement	40	5	5	25	25	10	5	40	25	40	220	22
% Rock	25			t	t	80		15	30	15	165	16
# Chips												
# Droppings												
# Pellet groups												

JR

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 57

By Mayben/Sandoval Date 8/7/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	
4. Browse species showing little or no hedging.		4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.		2. Soil movement detectable.	X
3. Soil cover continuous and intact.		3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Sample No: 55 Aerial Photo No. LV-10-534
Examiner(s): Moylan/Savage Date: 8/14/92 photos
Stand photo: (Y) (N) USGS Quad.: MT Wheeler Peak, NV
Forest: Toiyabe District: Las Vegas County/St.: Clark/NV 1 + 2
Twp: 20S Rge: 55E Sec: 29 Lat: _____ Long: _____
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: SPRING Mount Drainage: Wheeler Wash
Elev.: 6600 Aspect: 10° Slope: 15% Position: Mid
Landform: Foothills Configuration: undulating
Geologic material: limestone Parent material: alluviation
Soil name: _____
Site: Aquatic ____ Riparian ____ Upland X
Disturbance: Cattle X Sheep ____ WH&B X Deer X Elk ____ Antelope ____
Fire ____ Flood ____ Stream erosion ____ Nonstream erosion ____ Other X People

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland X c. Shrub ___
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland..a. Evergreen X Deciduous ___ Mixed ___
   Shrub.....a. Tall ___ Low X Mixed ___
   Herb.....a. Perennial X Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike X Forb ___ Mixed ___

Annual Production 300 lbs/acre 029XY065NV

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species	PIMO	ARTRV	BOGR
2. Co-dominant species	JUOS		
3. Ave. height of layer	3m	3m	

C. STAND NAMING

1. Present vegetation series (from Bradley): Pimo-JUOS
2. Present vegetation association: Pimo-JUOS/ARTRV/BOGR
3. Probable PNC: PIMO-JUOS/ARTRV/BOGR

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform ___ Fairly uniform ___
   Variable X Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up ___ Down X Not apparent ___
4. Suitability (grazer WH&B): Suitable
5. Remarks: ARTRV decadent BOGR decadent, survivors small-diameter, >2"; WH & cattle sign present plants
6. Cover and use: BOGR severely hedged w/s crowns

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	✓		✓		✓	1	✓	5	1	1	5	1
% Litter	35	100	30	100	5	5	10	5	20	5	375	38
% ~~Gryptogams~~	30		35		45	50	20	90	75	20	345	34
% Pavement	25		15		25	40	10	20	5	5	145	14
% Rock	10		20		25	5				70	130	13
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 55

By Mayben/Savacool Date 8/7/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	—	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	—	2. Forage species being pulled up and trampled out by grazing.	X
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	—	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.	—	4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	—	1. Ground cover dispersion--variable to highly variable.	X
2. No detectable soil movement.	—	2. Soil movement detectable.	X
3. Soil cover continuous and intact.	—	3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	—
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	—	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	X
6. Lichen lines on stones and rock fragments extend to soil level.	—	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	—
7. No active gullies.	—	7. Active gullies--indicated by recent cutting and sloughing.	X
8. No recent soil deposits either alluvial or aeolian.	—	8. Recent soil deposits--alluvial or aeolian.	X
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	—

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Sample No: 54 Aerial Photo No. LV-10-534
Examiner(s): Mayben / Savoccol Date: 8/7/92
Stand photo: (Y) (N) USGS Quad.: Mt Sterling 15 min photos
Forest: Toiyabe District: Las Vegas County/St.: Clark/NV 23+24
Twp: 20S Rge: 55E Sec: 29 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: SPRING MOUNT Drainage: Wheeler Wash
Elev.: 6600 Aspect: 210° Slope: 5 Position: middle
Landform: Wash Configuration: Undulating
Geologic material: limestone Parent material: alluvium
Soil name:
Site: Aquatic ___ Riparian X Upland ___
Disturbance: Cattle X Sheep ___ WH&B X Deer X Elk ___ Antelope ___
Fire ___ Flood ___ Stream erosion X Nonstream erosion ___ Other X People

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland X c. Shrub ___
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland..a. Evergreen X Deciduous ___ Mixed ___
   Shrub.....a. Tall X Low ___ Mixed ___
   Herb.....a. Perennial ___ Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed ___

Annual Production 400 lb/acre

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species	PIMO	ARTRT	
2. Co-dominant species	JUOS		
3. Ave. height of layer	1.5m	.5m	

629XY025NV

C. STAND NAMING

1. Present vegetation series (from Bradley): P-juniper
2. Present vegetation association: PIMO/JUOS/ARTRT
3. Probable PNC: PIMO-JUOS/ARTRT

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform ___ Fairly uniform ___
   Variable X Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up ___ Down X Not apparent ___
4. Suitability (grazer WH&B): Suitable
5. Remarks: WH sign frequent Cattle sign frequent
   ATV tracks in wash bottom ARTRT decadent
6. Cover and use:

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	5	T		25	35	20	5		T	5	95	10
% Litter	5	5	20	30	15	20	5	25	15	5	155	16
% Cryptogams	85	60	60	35	25	35	45	55	80	30	500	50
% Pavement	5	20	10	15	20	15	35	20	5	40	185	18
% Rock		15	/	5	5	10	10	/	/	20	65	6
# Chips												
# Droppings												
# Pellet groups												

DR

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Lehman Creek

Study Name/Number 54

By Mayben/Sawcod Date 8/7/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing		2. Forage species being pulled up and trampled out by grazing.	X
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.		3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.		4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.		1. Ground cover dispersion--variable to highly variable.	X
2. No detectable soil movement.		2. Soil movement detectable.	X
3. Soil cover continuous and intact.		3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.		4. Plant roots exposed. 1/	X
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.		5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	X
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Samole No: 58 Aerial Photo No. LV-11-506
Examiner(s): Mayben / Savage Date: 8/12/92
Stand photo: (Y) (N) USGS Quad.: MT. Sterling
Forest: Toiyabe District: Las Vegas County/St.: Clark/NV
Twp: 19S Rge: 55E Sec: 21 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: Spring Mount. Drainage: Wheeler Wash
Elev.: 7000 Aspect: 120° Slope: 30% Position: TOE
Landform: Foothills Configuration: Undulating
Geologic material: Tertiary Parent material: alluvium
Soil name:
Site: Aquatic ___ Riparian ___ Upland X
Disturbance: Cattle X Sheep ___ WH&B X Deer X Elk X Antelope ___
Fire X Flood ___ Stream erosion ___ Nonstream erosion ___ Other ___

photos 7+8

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland ___ c. Shrub X
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland. a. Evergreen ___ Deciduous ___ Mixed ___
   Shrub..... a. Tall ___ Low X Mixed ___
   Herb..... a. Perennial X Annual ___ Mixed ___
   b. Tall ___ Low X Mixed ___
   c. Grass/Grasslike X Forb ___ Mixed ___

Annual Production 900 lbs/acre
029XY 089NV

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species		CEGR	ARIN
2. Co-dominant species			
3. Ave. height of layer		.5m	

WH sign frequent
Livestock sign few

C. STAND NAMING

1. Present vegetation series (from Bradley): PIMO-JUOS
2. Present vegetation association: CEGR/ARIN
3. Probable PNC: PIMO-JUOS/ARTR-COMI

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform X Fairly uniform ___
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late ___ Mid ___ Early X Very early ___
3. Apparent trend: Up ___ Down X Not apparent ___
4. Suitability (grazer WH&B): Suitable
5. Remarks: JUOS seedlings; QUGA plants small, GAEL plants small both heavily hedged; ARIN, PIMO seedlings, plants heavily utilized
6. Cover and use: ARTR few plants, YUBASARTA present, few seedlings ARPU present, YUSC also being utilized

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	30	10	25	T	35	15	5	10	5	10	145	15
% Litter	25	15	20	/	30	/	25	5	15	5	140	14
% Cryptogams	10	20	10	25	15	30	35	40	30	40	255	25
% Pavement	20	25	15	35	10	15	15	15	20	20	190	19
% Rock	15	30	30	40	10	40	20	30	30	25	270	27
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

ARPU, GAEL, QUGA < .25 tall
Most plants w/in CEGR cover

Bare

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 58

By Mayben/Sowrool Date 8/12/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.		1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.		3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.		4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.		2. Soil movement detectable.	X
3. Soil cover continuous and intact.		3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed.[1/]	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.		7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

[1/] At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-25 (11/86)

VEGETATION DATA FORM - Page 1

Sample No: 59 Aerial Photo No. LV-10-474
Examiner(s): Moylan / Savocool Date:
Stand photo: (Y) (N) USGS Quad.: MT Sterling 15 min
Forest: Toiyabe District: LOS Vegas County/St.: Clark/NV
Twp: 18S Rge: 55E Sec: 22 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: Spring Mountains Drainage: Wheeler Wash
Elev.: 7200 Aspect: 330° Slope: 30% Position: TOE
Landform: Foothills Configuration: Undulating
Geologic material: limestone Parent material: alluvium
Soil name:
Site: Aquatic ___ Riparian X Upland ___
Disturbance: Cattle ___ Sheep ___ WH&B X Deer X Elk ___ Antelope ___
Fire ___ Flood ___ Stream erosion ___ Nonstream erosion ___ Other ___

photos 9 & 10

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland X c. Shrub ___
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland.a. Evergreen X Deciduous ___ Mixed ___
   Shrub.....a. Tall X Low ___ Mixed ___
   Herb.....a. Perennial X Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed ___

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species	PIMO	QUGA	POFE
2. Co-dominant species	JUOS	CELE	
3. Ave. height of layer	2m	1m	

Annual Production
600 lbs/acre
029XY078NV

C. STAND NAMING

1. Present vegetation series (from Bradley): PIMO-JUOS
2. Present vegetation association: PIMO-JUOS/QUGA-CELL/POFE
3. Probable PNC: PIMO-JUOS/CELE-QUGA/POFE

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform ___ Fairly uniform X
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up X Down ___ Not apparent ___
4. Suitability (grazer WH&B): Suitable
5. Remarks: QUGA heavily browsed POFE + 70% utilization
   ARTR present but few, WH sign frequent, deer sign occasional
6. Cover and use:

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	✓	✓	✓	5		✓	5	5	5		20	2
% Litter	85	25	100	5	100	10	90	90	70	95	660	66
% Cryptogams (for)	10	45		25		35			10		125	12
% Pavement	5	25		45		45	5	5	10		140	14
% Rock		5		20		10			5	15	55	6
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 59

By Mayben/Sandoval Date 2/12/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.		3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.		4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.	X	2. Soil movement detectable.	
3. Soil cover continuous and intact.	X	3. Soil cover broken and soil exposed.	
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.	X	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.		7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - Page 1

Samole No: 60 Aerial Photo No. LV-12-494
Examiner(s): Mayben/Savacool Date: 9/12/92
Stand photo: (Y) (N) USGS Quad.: MT Sterling
Forest: Toiyabe District: Las Vegas County/St.: Clark/NV
Twp: 18S Rge: 56E Sec: 15 Lat: Long:
Allot./Terr.: Wheeler Wash
Mt. Range/Valley: SPRING MOUNT. Drainage: Wheeler Wash
Elev.: 7600 ft Aspect: 230° Slope: 20 % Position: MID
Landform: foothills Configuration: Undulat.
Geologic material: limestone Parent material: alluvium
Soil name:
Site: Aquatic ___ Riparian ___ Upland X
Disturbance: Cattle X Sheep ___ WH&B X Deer X Elk X Antelope ___
Fire X Flood ___ Stream erosion ___ Nonstream erosion ___ Other ___

photos 11+12

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland ___ c. Shrub X
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland.a. Evergreen ___ Deciduous ___ Mixed ___
   Shrub.....a. Tall ___ Low ___ Mixed X
   Herb.....a. Perennial X Annual ___ Mixed ___
   b. Tall ___ Low X Mixed ___
   c. Grass/Grasslike X Forb ___ Mixed ___

Burn

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species		CEGR	ORHY
2. Co-dominant species		GAFL	AGDE
3. Ave. height of layer		.4m	

Annual Produc 200 lbs/acre

029XY068M

C. STAND NAMING

1. Present vegetation series (from Bradley): PIMO-JUOS
2. Present vegetation association: CEGR-GAFL/ORHY-AGDE
3. Probable PNC: PIMO-JUOS/CELE-QUGA

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform X Fairly uniform ___
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late ___ Mid ___ Early X Very early ___
3. Apparent trend: Up ___ Down ___ Not apparent X
4. Suitability (grazer WH&B): Suitable
5. Remarks: GAFL & QUGA signs of moderate to heavy browsing AGDE seeded ARTR ARPU. Globemallow CEGR plants few decadent
6. Cover and use: QUGA showing browse line of 5' Grass spp with shrub canopy

depend on location & trails

Cover/Use	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	10	25	5	25	25	10	5	10	15		130	13
% Litter	40	30	35	40	30	90	70	5	85	20	445	45
% ~~Cryptogams~~ bare	30	20	30	25	10		15	35		30	195	19
% Pavement	15	25	25	10	20		10	35		40	180	18
% Rock	5	/	5	/	15			15		10	50	5
# Chips												
# Droppings												
# Pellet groups												

Animals trampling shrub & root grass

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 40

By Mayben / Swarcad Date 8/12/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	—	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	—	2. Forage species being pulled up and trampled out by grazing.	X
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	—	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.	—	4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	—
2. No detectable soil movement.	X	2. Soil movement detectable.	—
3. Soil cover continuous and intact.	X	3. Soil cover broken and soil exposed.	—
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	—
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	—
6. Lichen lines on stones and rock fragments extend to soil level.	X	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	—
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	—
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	—
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	—

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

VEGETATION DATA FORM - PAGE 1

PLOT | 12

CREW | Mayberry | DATE | 6/17/92

ELEV | 6000 | ASPECT | 281 | SLOPE | 16 | POS | Upper | CONF | Undulating
LANDFORM | Foothills
PHOTO # | HAL-154 | QUAD | Mt Sterling 15 min

LOCATION:
FOREST | Toiyabe | DISTRICT | Las Vegas | CNT/ST | Clark NV
T-R-S | T18S R56E Sec 3 | LAT | | LONG |
MT. RANGE/VALLEY | Spring Mtns | DRAINAGE | Willow Creek
ALLOTMENT | Wheeler Wash

Suitable Range w/ Soil Erosion III

DISTURBANCE: CATTLE | | SHEEP | | BEAVER | | OTHER | Elk, WH, & Poodle
STREAM CUTTING/EROSION |

RIPARIAN | | UPLAND | X | AQUATIC |

LEVEL I. STAND PHYSIOGNOMY:
1. CLASS (check one) a. Forest ___ b. Woodland ___ Shrub X
d. Herb ___ e. Non-vegetated ___
2. SUBCLASS OF CLASS:
FOREST OR WOODLAND - a. Evergreen ___ Deciduous ___ Mixed ___
SHRUB - a. Tall ___ Low X Mixed ___
HERB - a. Perennial X Annual ___ Mixed ___
- b. Tall ___ Low X Mixed ___
c. Grass- Grasslike ___ Forbs X Mixed ___

Photos 8, 11

Annual Production 900 lbs/acre

029XY089NV

STAND STRUCTURE:

	Tree Layer	Shrub Layer	Herb Layer
NAME OF DOMINANT SPECIES IN LAYER		CEGR	SIHY
NAME OF CO-DOMINANT SPECIES IN LAYER		COME	AGDE
HEIGHT OF LAYER		.75m	

AGDE w/ shrub cover

PRESENT VEGETATION SERIES (from Genz): PIMO-JUOS
PRESENT VEGETATION COMMUNITY (dominant/co-dominant) CEGR-COME/SIHY
RIPARIAN CLASSIFICATION (from Manning & Padgett)
APPARENT SERAL STAGE: EARLY | | MID | X | LATE | | PNC | |
PROBABLE PNC: | PIMO-JUOS/ARTRV-COME

Manzanita beginning to establish

APPARENT TREND: UP | | DOWN | X | STABLE | |
TREND CRITERIA: R4-2200-25

hedging on COME

PREA

SOILS:

	%C
% SOIL < 2 mm	25
% FINE 2-18 mm"	27
% COARSE > 18 mm	5
%LITTER/CRYPTO	27
% SURFACE CRUST	16

GEOL. MATERIAL | Limestone
PARENT MATERIAL | Limestone/Volcanic Alluvium
SOIL NAME |

Manzanita present

JUOS beginning to sprout

COMMENTS: | RHTR, AMUT present - more than sparse but not abundant. GUGA beginning to establish EPUE present

PEPA present & abundant

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	
V	20	20	5	5	5	35	15	10	30	15	160
L	60	30	5	15	T	40	T	50	55	10	245
R	5	10	10	5	5	-	5	5	-	5	40
P	5	15	45	40	45	20	45	10	5	45	275
B	10	25	35	35	45	5	35	25	10	25	250

1000

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 12

By Mayben Date 6/17/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	___	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	___
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	___	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.	___	4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	___
2. No detectable soil movement.	___	2. Soil movement detectable.	X
3. Soil cover continuous and intact.	___	3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed.[1]	___
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	___	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	X
6. Lichen lines on stones and rock fragments extend to soil level.	___	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	___
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	___
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	___
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	___

[1] At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-25-11/86

VEGETATION DATA FORM - Page 1

Sample No: 38 Aerial Photo No. LV-15-454

Examiner(s): Mayben/Savacool Date: 7/23/92

Stand photo: (Y) (N) USGS Quad.: MT SIRLING

Forest: TOIYABE District: LAS Vegas County/St.: CLARK/NV

Twp: 55 E Rge: 18 S Sec: 2 Lat: Long:

Allot./Terr.: WHEELER WASH

Mt. Range/Valley: SPRING MT. Drainage: WILLOW CREEK

Elev.: 5000 Aspect: 225 Slope: 30 % Position: mid

Landform: Foothills Configuration: Undulating

Geologic material: Limestone Parent material: Limestone

Soil name:

Site: Aquatic ____ Riparian ____ Upland X

Disturbance: Cattle ___ Sheep ___ WH&B X Deer X Elk X Antelope ___

Fire X Flood ___ Stream erosion ___ Nonstream erosion ___ Other X People

Photos 21+22

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland X c. Shrub ___
   d. Herb ___ e. Non-vegetated ___

2. Subclass
   Forest or Woodland. a. Evergreen X Deciduous ___ Mixed ___
   Shrub..... a. Tall ___ Low X Mixed ___
   Herb..... a. Perennial X Annual ___ Mixed ___
   b. Tall ___ Low X Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed X

B. STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
1. Dominant species	JUOS	ARPU	ORHY
2. Co-dominant species		CEGR	
3. Ave. height of layer	1 m	.7 m	

Annual Production 200 lbs/acre 029XY068NV

C. STAND NAMING

1. Present vegetation series (from Bradley): Pimo-JUOS
2. Present vegetation association: JUOS/ARPU-CEGR
3. Probable PNC: Pimo-JUOS/ARTR-COME

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform ___ Fairly uniform X
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late ___ Mid ___ Early X Very early ___
3. Apparent trend: Up ___ Down ___ Not apparent X
4. Suitability (grazer WH&B): Suitable
5. Remarks: COME/ARTR-Seedlings JUOS seedlings Pimo few seedlings seen QUGA present; CORA present on S slopes; EPVI, CELE, PRSE
6. Cover and use: WH sign frequent, ORHY plants 60% utilized

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	25	5	25	20	10	5	20	T	5	5	120	12
% Litter	30	T	10	25	30	5	55	20	5	15	195	20
% ~~Cryptogams~~ (bare)	20	55	30	30	30	35	10	25	45	40	320	32
% Pavement	25	35	25	20	25	40	10	40	35	35	290	29
% Rock	T	5	10	5	5	15	5	15	10	5	75	7
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 38

By Mayben/Savoca Date 7/23/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	—	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	—
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	—
4. Browse species showing little or no hedging.	—	4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	—
2. No detectable soil movement.	—	2. Soil movement detectable.	X
3. Soil cover continuous and intact.	—	3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	—
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	—
6. Lichen lines on stones and rock fragments extend to soil level.	—	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	—
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	—
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	—
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	—

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-23 (11/86)

VEGETATION DATA FORM - Page 1

mole No: 39 Aerial Photo No. LV-13-454 photos
aminer(s): MAYBEN / SAVAGE Date: 9/23/92
tand photo: (Y) (N) USGS Quad.: MT STIRLING
Forest: TOIYABE District: LAS VEGAS County/St.: CLARK/NV 23+24
Twp: 55E Rge: 18S Sec: 2 Lat: Long:
Allot./Terr.: WHEELER WASH
Mt. Range/Valley: SPRING MT Drainage: WILLOW CREEK
Elev.: 6000 Aspect: 15° Slope: 20 % Position: MID
Landform: FOOT HILLS Configuration: UNDULATING
Geologic material: LIMESTONE Parent material: LIMESTONE ALLUVIUM
Soil name:
Site: Aquatic ___ Riparian ___ Upland X
Disturbance: Cattle ___ Sheep ___ WH&B X Deer X Elk X Antelope ___
Fire X Flood ___ Stream erosion ___ Nonstream erosion ___ Other X People

LEVEL I SURVEY

STAND PHYSIOGNOMY (Remote sensing/Field reconnaissance)

A. ASPECT

1. Class (Check one): a. Forest ___ b. Woodland X c. Shrub ___
   d. Herb ___ e. Non-vegetated ___
2. Subclass
   Forest or Woodland.a. Evergreen X Deciduous ___ Mixed ___
   Shrub.....a. Tall ___ Low X Mixed ___
   Herb.....a. Perennial ___ Annual ___ Mixed ___
   b. Tall ___ Low ___ Mixed ___
   c. Grass/Grasslike ___ Forb ___ Mixed ___

STAND STRUCTURE

	Tree layer	Shrub layer	Herb Layer
.. Dominant species	PIMO	ARTRV	.
2. Co-dominant species	JUOS		
3. Ave. height of layer	2M	.25m	

Annual Production 300 lbs/acre 029XY065NV

C. STAND NAMING

1. Present vegetation series (from Bradley): PIMO-JUOS
2. Present vegetation association: PIMO-JUOS/ARTRV
3. Probable PNC: PIMO-JUOS/ARTRV-COME

D. OTHER INTERPRETATIVE/DESCRIPTIVE INFORMATION ABOUT STAND

1. Plant dispersion: Uniform X Fairly uniform ___
   Variable ___ Highly variable ___
2. Apparent seral stage: PNC ___ Late X Mid ___ Early ___ Very early ___
3. Apparent trend: Up X Down ___ Not apparent ___
4. Suitability (grazer WH&B): Suitable.
5. Remarks: EPVI, COME, PHTR, QUGA, CEGE, PIMO seedlings Elk & WH sign frequent Deer sign more frequent
6. Cover and use: GAPL, CELE

Cover/Use	Plot P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Sum	Ave.
% Tree cover												
% Shrub cover												
% Vegetation	3	5	T	20	30	25	10		25		120	12
% Litter	15	60	50	5	T	50	40	10	35	55	320	32
% ~~Cryptogams~~	30	15	15	25	35	15	20	35	10	20	220	22
% Pavement	45	10	10	10	25	10	25	25	20	10	190	19
% Rock	5	10	25	40	10	T	5	30	10	15	150	15
# Chips												
# Droppings												
# Pellet groups												

Sum of %vegetation, %litter, %cryptogams, %pavement, & %rock=1000; ave.=100.
Circular plot. For cover: 1-m or 9.6 sq.ft.; for use: 1/100-ha or 1/100-ac.

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Wheeler Wash

Study Name/Number 39

By Mayben/Savacool Date 7/23/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	X	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	
4. Browse species showing little or no hedging.		4. Browse species showing heavy hedging.	X

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	
2. No detectable soil movement.	X	2. Soil movement detectable.	
3. Soil cover continuous and intact.	X	3. Soil cover broken and soil exposed.	
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	
6. Lichen lines on stones and rock fragments extend to soil level.		6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	
9. No wind-scoured depressions.	X	9. Wind-scoured depressions.	

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-23 (11/86)

VEGETATION DATA FORM - PAGE 1

PLOT | 1 |

CREW | GENZ/MAYBEN | DATE | 6/16/92 |

ELEV | 5900' | ASPECT | N | SLOPE | | POS | Mid | CONF | Smooth |
LANDFORM | Alluvial Fan |
PHOTO # | LV-15N 158 | QUAD | Charleston Peak 15 min |

LOCATION:
FOREST | Toiyabe | DISTRICT | Las Vegas | CNT/ST | Clark, NV |
T-R-S | 17S 56E 31 | LAT | | LONG | |
MT. RANGE/VALLEY | Spring Mtn | DRAINAGE | Cold Creek |
ALLOTMENT | Lucky Strike |

Suitable Range

DISTURBANCE: CATTLE | | SHEEP | | BEAVER | X | OTHER | WH/Elk/People
STREAM CUTTING/EROSION |

RIPARIAN | | UPLAND | X | AQUATIC | |

LEVEL I. STAND PHYSIOGNOMY:
1. CLASS (check one) a. Forest ____ b. Woodland ____ Shrub X
d. Herb ____ e. Non-vegetated ____
2. SUBCLASS OF CLASS:
FOREST OR WOODLAND - a. Evergreen X Deciduous ___ Mixed ___
SHRUB - a. Tall X Low ___ Mixed ___
HERB - a. Perennial X Annual ___ Mixed ___
- b. Tall ___ Low X Mixed ___
c. Grass- Grasslike ___ Forbs ___ Mixed X

STAND STRUCTURE:

	Tree Layer	Shrub Layer	Herb Layer
NAME OF DOMINANT SPECIES IN LAYER		ATRTRV	SIHY
NAME OF CO-DOMINANT SPECIES IN LAYER		—	OKHY
HEIGHT OF LAYER		.5m	

Annual Production Unmeasurable 500 lbs/acre 029XY00AINV

PRESENT VEGETATION SERIES (from Genz): Joshua Tree / Blackbrush
PRESENT VEGETATION COMMUNITY (dominant/co-dominant) ____
RIPARIAN CLASSIFICATION (from Manning & Padgett) ____
APPARENT SERAL STAGE: EARLY | | MID | X | LATE | | PNC | |
PROBABLE PNC: | ARTRV ORHY
APPARENT TREND: UP | | DOWN | X | STABLE | |
TREND CRITERIA: RH-2000-25

SOILS:

	%C
% SOIL < 2 mm	27
% FINE 2-18 mm"	41
% ~~COARSE > 18 mm~~	6
%LITTER/CRYPTO	3
% ~~SURFACE CRUST~~	23

Pavement Rock

Veg

GEOL. MATERIAL | Limestone
PARENT MATERIAL | Alluvial Limestone & Volcanic
SOIL NAME | ____

COMMENTS: | Area used extensively by Recreationists
2 WH Beds Present & Around
Elk Tracks present - Use pre. Winter.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Σ
	1%	15	40	40	40	5	40	5	5	15	226
	1%	5	10	25	5	T	T	5	5	5	61
P	88%	30%	35	5	30	55	20	50	60	35	408
L/C	T	5	5		10	T	5	T	5	T	35
B	10%	45%	10	5	15	40	35	40	25	45	270

1000

Pl. # 1

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT LV ALLOTMENT Lucky Strike

Study Name/Number #1

By Cone/Mathews Date 4/10/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	___	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	___
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	___	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	X
4. Browse species showing little or no hedging.	—	4. Browse species showing heavy hedging.	—

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	___	1. Ground cover dispersion--variable to highly variable.	X
2. No detectable soil movement.	___	2. Soil movement detectable.	X
3. Soil cover continuous and intact.	___	3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed. 1/	___
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	X	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	___
6. Lichen lines on stones and rock fragments extend to soil level.	—	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	—
7. No active gullies.	___	7. Active gullies--indicated by recent cutting and sloughing.	X
8. No recent soil deposits either alluvial or aeolian.	___	8. Recent soil deposits--alluvial or aeolian.	X
9. No wind-scoured depressions.	___	9. Wind-scoured depressions.	X

Pedestalled plants & rills

1/ At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-25-11/86

VEGETATION DATA FORM - PAGE 1

PLOT | 2

CREW | Genz/Mayben | DATE | 6/10/92

ELEV | 5900' | ASPECT | N | SLOPE | | POS | Mid | CONF | Smooth
LANDFORM | Alluvial Plane
PHOTO # | LV-15M 158 | QUAD | Charleston Peak 15min

LOCATION:
FOREST | Toiyabe | DISTRICT | Las Vegas | CNT/ST | Clark NV
T-R-S | 17S 56E 31 | LAT | | LONG |
MT. RANGE/VALLEY | Spring Mtn | DRAINAGE | Cold Creek
ALLOTMENT | Lucky Strike

DISTURBANCE: CATTLE | | SHEEP | | BEAVER | | OTHER | WH, Elk / People
STREAM CUTTING/EROSION |

RIPARIAN | | UPLAND | X | AQUATIC | |

Suitable Range

LEVEL I. STAND PHYSIOGNOMY:
1. CLASS (check one) a. Forest ____ b. Woodland ____ Shrub X
d. Herb ____ e. Non-vegetated ____
2. SUBCLASS OF CLASS:
FOREST OR WOODLAND - a. Evergreen ____ Deciduous X Mixed ____
SHRUB - a. Tall X Low ____ Mixed ____
HERB - a. Perennial X Annual ____ Mixed ____
- b. Tall ____ Low X Mixed ____
c. Grass- Grasslike X Forbs ____ Mixed ____

STAND STRUCTURE:

	Tree Layer	Shrub Layer	Herb Layer
NAME OF DOMINANT SPECIES IN LAYER		CoUSA	ACDE
NAME OF CO-DOMINANT SPECIES IN LAYER			AGIN
HEIGHT OF LAYER		.33m	

Annual Products ? lbs/acre

PRESENT VEGETATION SERIES (from Genz): Joshua Tree / Blackbrush
PRESENT VEGETATION COMMUNITY (dominant/co-dominant) ACDE/AGIN - Seeding
RIPARIAN CLASSIFICATION (from Manning & Padgett)
APPARENT SERAL STAGE: EARLY | X | MID | | LATE | | PNC | |
PROBABLE PNC: | CORA
APPARENT TREND: UP | | DOWN | X | STABLE | |
TREND CRITERIA: E4-2000-25

SOILS:

	%C
% SOIL < 2 mm	47
% ~~FINE 2-18 mm~~	11
% COARSE > 18 mm	3
%LITTER/CRYPTO	7
% SURFACE CRUST	42
	100

B V R L P

GEOL. MATERIAL | Limestone
PARENT MATERIAL | Alluvial limestone Volcanic
SOIL NAME | —

COMMENTS: | Red Brome ; CoUSA increasing ; heavy use by WH yearlong Browse Fire 1981

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	
V	5	5	25	5	15	10	15	10	10	5	165
R	5	10	T	5	5	T	T	T	5	T	30
P	40	40	25	35	25	60	60	55	40	45	425
2	T	T	5	5	5	T	5	T	T	T	20
B	50	45	45	50	50	30	20	35	45	50	420 / 100

USDA Forest Service

APPARENT TREND RATING
(FSH 2209.21, 2.23g)

FOREST Toiyabe DISTRICT Las Vegas ALLOTMENT Lucky Strike

Study Name/Number 2

By Connie Mayberry Date 4/10/92

VEGETATION

Up or Stable		Down	
1. Favorable frequency grouping and age classes of higher seral stage plants.	___	1. A disproportionate amount of early seral stage plants. Seedlings having difficulty in becoming established.	X
2. Forage plants not being pulled up or trampled out by grazing	X	2. Forage species being pulled up and trampled out by grazing.	___
3. Vigor of key species high as indicated by leaf length, seed stock production, and normal color.	X	3. Low vigor of key species as indicated by reduced size of plant, reduced leaf length, lack of seed stalks, and off-color (sickly yellow).	___
4. Browse species showing little or no hedging.	—	4. Browse species showing heavy hedging.	—

SOIL

Up or Stable		Down	
1. Ground cover dispersion--uniform.	X	1. Ground cover dispersion--variable to highly variable.	___
2. No detectable soil movement.	___	2. Soil movement detectable.	X
3. Soil cover continuous and intact.	___	3. Soil cover broken and soil exposed.	X
4. No exposure of plant roots.	X	4. Plant roots exposed.[1]	___
5. Stones and rock fragments, where present, normal, and in place--no movement of rock fragments.	___	5. Stones and rock fragments, where present, concentrating on surface as erosion pavement. Fragments loose and often moving downslope.	X
6. Lichen lines on stones and rock fragments extend to soil level.	—	6. Lichen lines on stones considerably above soil surface--no lichens on rock fragments.	—
7. No active gullies.	X	7. Active gullies--indicated by recent cutting and sloughing.	___
8. No recent soil deposits either alluvial or aeolian.	X	8. Recent soil deposits--alluvial or aeolian.	___
9. No wind-scoured depressions.	___	9. Wind-scoured depressions.	X

[1] At high elevations and on heavy soils some of this may be natural due to frost heaving.

R4-2200-25-11/86

United States Department of Agriculture | Forest Service | Toiyabe N.F.

D1

'92

Reply: 2260

Date: July 6, 1992

DR
FMO
RES
R&L
SSS
TMA
LEO

Subject: WH&B Suitability Criteria, Spring Mountain Range

To: District Ranger, Las Vegas

Enclosed is suitability criteria for your wild horse and burro range. The criteria was updated to be consistent with the Forest LRMP, resource values of the Spring Mountain Range, and habits of wild horses and burros.

This criteria is to be retained as a part of the permanent record of analysis data of your wild horse and burro territories. This record should ultimately include, but is not limited to, field analysis mapping materials, completed analysis map, acreage compilations, notes and forms used in the inventory of ecological types, apparent trend rating forms, references to existing publications used in the inventory, and summary report of the analysis.

Melody S. Mobley

for R.M. "JIM" NELSON
Forest Supervisor

Enclosure: WH&B Suitability Criteria

cc: Regional Office, RW (Hall)
TNF, District Rangers
Humboldt N.F

Note: DRs D2, D3, & D4- this criteria might also be appropriate to your territories as written or with minor modification. Let us know.

SUITABILITY CRITERIA FOR WILD HORSE & BURRO RANGE
TOIYABE NATIONAL FOREST - SPRING MOUNTAIN RANGE[1]

TERRITORY/HERD MANAGEMENT AREA:_____

Developed By: Kenneth R. Genz, 1992

1. Inherent native forage producing ability of the area is less than 55 kilograms per hectare or 50 pounds per acre (air dry weight).....2

1. Inherent native forage producing ability of the area is greater than 55 kilograms per hectare or 50 pounds per acre (air dry weight).....3

2. Area barren.....B-type

2. Area not barren.....Unsuitable

3. Distance less than 10 miles from natural spring or stream having a perennial freshwater supply.....4

3. Distance 10 miles or greater from natural spring or stream having a perennial freshwater supply.....Unsuitable

4. Soil Erodibility Index, Class I, II, or III.....Key 1, page 1

4. Soil Erodibility Index, Class IV or V.....Key 2, page 2

Key 1. Soil Erodibility Index, Class I, II, or III

1. Slope 75 percent or greater.....Unsuitable

1. Slope 74 percent or less.....2

2. Slope 60 percent to 74 percent.....3

2. Slope 59 percent or less.....7

3. Ground cover 65 percent or greater.....4

3. Ground cover 64 percent or less.....6

4. Dispersion rating uniform.....Suitable/Closed

4. Dispersion rating highly variable to fairly uniform.....5

---

[1]See page five for explanation of suitability terms.

5. Area grazable under a reasonable management system.....Suitable/Closed

5. Area not grazable without soil damage under a reasonable management system.....Unsuitable

6. Area grazable under a reasonable management system.....Suitable/Closed

6. Area not grazable without soil damage under a reasonable management system.....Unsuitable

7. Slope 25 percent to 59 percent.....8

7. Slope 24 percent or less.....12

8. Ground cover 50 percent or more.....9

8. Ground cover 49 percent or less.....11

9. Dispersion rating fairly uniform to uniform.....Suitable/Closed

9. Dispersion rating highly variable to variable.....10

10. Area grazable under a reasonable management system.....Suitable/Closed

10. Area not grazable without soil damage under a reasonable management system.....Unsuitable

11. Area grazable under a reasonable management system.....Suitable/Closed

11. Area not grazable without soil damage under a reasonable management system.....Unsuitable

12. Ground cover 40 percent or greater.....13

12. Ground cover 39 percent or less.....15

13. Dispersion rating fairly uniform to uniform.....Suitable/Closed

13. Dispersion rating highly variable to variable.....14

14. Area grazable under a reasonable management system.....Suitable/Closed

14. Area not grazable without soil damage under a reasonable management system.....Unsuitable

15. Area amenable to rehabilitation or grazable under a reasonable management system or both.....Suitable/Closed

15. Area not amenable to rehabilitation or not grazable without soil damage under a reasonable management system or both.....Unsuitable

Key 2. Soil Erodibility Index, Class IV or V

1. Slope 40 percent or greater.....Unsuitable

1. Slope 39 percent or less.....2

2. Slope 20 percent to 39 percent.....3

2. Slope 19 percent or less.....7

3. Ground cover 65 percent or greater.....4

3. Ground cover 64 percent or less.....6

4. Dispersion rating uniform.....Suitable/Closed

4. Dispersion rating highly variable to fairly uniform.....5

5. Area grazable under a reasonable management system.....Suitable/Closed

5. Area not grazable without soil damage under a reasonable management system.....Unsuitable

6. Area grazable under a reasonable management system.....Suitable/Closed

6. Area not grazable without soil damage under a reasonable management system.....Unsuitable

7. Slope 10 percent to 19 percent.....8

7. Slope nine percent or less.....12

8. Ground cover 45 percent or greater.....9

8. Ground cover 44 percent or less.....11

9. Dispersion rating fairly uniform or uniform.....Suitable/Closed

9. Dispersion rating highly variable to variable.....10

10. Area grazable under a reasonable management system.....Suitable/Closed

10. Area not grazable without soil damage under a reasonable management system.....Unsuitable

11. Area amenable to rehabilitation or grazable under a reasonable management system or both.....Suitable/Closed

11. Area not amenable to rehabilitation or not grazable without soil damage under a reasonable management system or both.....Unsuitable

12. Ground cover 30 percent or more.....13

12. Ground cover 29 percent or less.....14

13. Area grazable under a reasonable management system.....Suitable/Closed

13. Area not grazable wuithout soil damage under a resonable management system.....Unsuitable

14. Area amenable to rehabilitation or grazable under a reasonable management system or both.....Suitable/Closed

14. Area not amenable to rehabilitation or not grazable without soil damage under a reasonable management system or both.....Unsuitable

SUITABILITY TERMS:

Suitable Range: Range that is accessible to wild horses or burros or might become accessible; produces or has the potential to produce native forage in excess of 55 kilograms per hectare, air dry weight, (50 lbs./acre); and, can be grazed on a sustained-yield basis without damage to the water, soil, and vegetation resources or other resource values, under a reasonable management practice or practices.

Closed Range: Suitable range that has been closed to grazing use by wild horses and burros. For example these kinds of range might fall into this classification: critical habitat for endangered, threatened, sensitive, or endemic animals and plants; sources of domestic water; recreation areas; special use areas; research areas; mining and mill sites; and administrative facilities and pastures.

Unsuitable Range: Range that might be accessible or not accessible to wild horses and burros that has no inherent forage producing ability, habitat value for, or should not be grazed because of inherently unstable soils, steep topography, or barreness. These areas will continue to be unsuitable regardless of management, restoration, rehabilitation, or reclamation measures applied. Unsuitable range includes the B-type. Unsuitable range also includes situations that meet the criteria for suitable range but are not being used, or are being used very lightly[2], because of distance to water. When water becomes available as a result of a management plan, the range served by the water development or developments may be re-classified as suitable.

B-Type: Barren range on which any type of vegetation is inherently absent or very sparse, e.g. scree slopes, rock slides, boulder fields, lava flows, cliffs, and rock outcrops.

The symbols used to map range suitability are: **S**= Suitable Range; **C**= Closed Suitable Range; **U**= Unsuitable Range; and, **B**= Barren Range.

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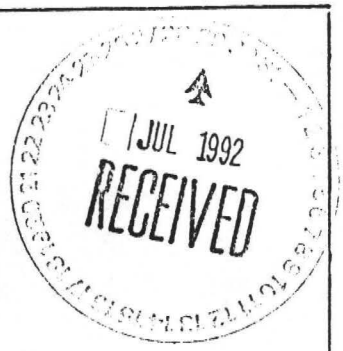
[2]Use is less than three horse/burro days per hectare or one horse/burro day per acre.

Exhibit 11



SOIL ERODIBILITY APPRAISALS

Outlined below are four factors affecting soil erosion.

I. Climate (initial erosion energy)
   - A. Storm frequency
   - B. Storm intensity
   - C. Storm duration

II. Soil (erodibility of the soil)
   - A. Aggregate detachability - strength and size of the surface soil aggregates.
   - B. Profile characteristics affecting the disposition of infiltrated water texture, depth, restricting layers, etc.
   - C. Coarse fragments - surface gravel and stone.

III. Topography (erosiveness of the runoff)
   - A. Runoff velocity - slope gradient, roughness
   - B. Runoff quantity - slope length, slope shape

IV. Effectiveness of the erosion retardants
   - A. Detachment reducers - vegetation, litter, mulches
   - B. Transport reducers - litter, mulches, trenches, pits, dams, barriers, etc.

The term "erosion hazard" will be reserved to encompass the overall erosion hazard by water on a given site - the hazard resulting from the combined effects of climate, soils, topography, and vegetation. The term "inherent erosion hazard" includes the effects of climate, soils, and topography, but excludes the protective effects of vegetation.

Soil erodibility is used to encompass only those characteristics and qualities of the soil that appear to be more or less controlling in providing stability or instability to a soil insofar as erosion by water is concerned. It is this factor of soils - the rating of soil erodibility - that is the principal concern.

It is well known that soils vary in their ability to resist erosion. Most of this resistance, or lack of resistance, seems to be related to: (1) The stability of the surface soil aggregates, and (2) the ease with which the soil becomes saturated, thus forcing water to flow over the surface. If the surface soil aggregates are stable in a moist state, detachment by raindrop impact is

minimized. If the soil mantle is permeable and allows a reasonably rapid infiltration and downward percolation of water, surface flows of excess water are less frequent. Any restriction to percolation in the soil such as increases of clay content, hardpans, compacted layers, or bedrock at shallow depths will prevent or retard the downward movement of water and consequently increase the erosion potential.

The method used for gathering the necessary appraisal data will be a squirt bottle test in conjunction with a soil profile description. The squirt bottle test involves subjecting a moistened soil aggregate of the surface horizon to one or more jets of water and noting the effort required to collapse the aggregate. The soil profile description will necessarily have to be brief and perhaps somewhat generalized, but of particular concern are the following items:

Profile characteristics affecting permeability - texture, structure, consistence, stone and root content of each horizon along with its thickness.

Coarse fragments on the surface - percentage estimate of the total fragments exposed on the soil surface (or would be exposed if the vegetation and litter were removed).

Data interpretation

The guide used in making this soil erodibility classification is based on an index system and in it are listed the criteria together with numerical values assigned to each class for the different criteria. The first portion of the guide evaluates surface aggregate detachability. In rating the detachability index, consider the surface layer just below where the organic layer and the root mat are dominating factors, and consider the largest primary unit of structure.

The second portion of the guide appraises the permeability of the soil profile, irrespective of the present vegetal cover. The criteria are for guidance only giving the usual trend for textural, permeability, and soil depth differences. Each man should expand or tailor these descriptions according to regional soil characteristics considered important as clues to estimating permeability in the field.

Part III of the guide indicates the method to use for adjusting the detachability rating.

Part IV of the guide indicates the method by which the soil erodibility index is obtained.

Exhibit 11

SOIL ERODIBILITY CLASSIFICATION GUIDE

I. DETACHABILITY CLASSES	Detachability Index
Surface horizon aggregates STRONGLY resistant to detachment or dispersion; aggregates dominantly GREATER THAN 2mm. in diameter after wetting; moistened aggregates maintain their stability when washed repeatedly by a fine stream of water from a plastic wash bottle.	1 or 2
Surface horizon aggregates STRONGLY resistant to detachment or dispersion; aggregates dominantly LESS THAN 2 mm. in diameter after wetting.	3 or 4
Surface horizon aggregates MODERATELY resistant to detachment or dispersion; moistened aggregates soon become completely detached or dispersed when repeatedly washed by a fine stream of water.	5 or 6
Surface horizon aggregates WEAKLY resistant to detachment or dispersion; aggregates begin to collapse when first moistened or are readily detached with first wash of a fine stream of water from a plastic wash bottle.	7 or 8
Surface horizon NOT aggregated but is single grain; particles in a detached state.	9 or 10

II. PROFILE PERMEABILITY RATINGS

Permeability of Surface Horizon(s)	Reduction of Permeability in Lower Horizon(s)	Depth at Which Permeability Reduction Begins			
		Less Than 6"	6-18"	18-36"	Greater Than 36"
		PROFILE PERMEABILITY INDEXES			
Rapid (sands, loamy sands)	Little or No Reduction[1]				1 or 2
	Moderate Reduction[2]	5 to 7	3 or 4	2 or 3	1 or 2
	Pronounced Reduction[3]	8 to 10	5 to 7	3 or 4	1 or 2
Moderately Rapid (sandy loams, very gravelly loams)	Little or No Reduction				3 or 4
	Moderate Reduction	7 to 8	5 or 6	4 or 5	3 or 4
	Pronounced Reduction	9 or 10	7 or 8	5 or 6	3 or 4
Moderate (loams, silt loams)	Little or No Reduction				5 or 6
	Moderate Reduction	7 to 8	6 or 7	5 or 6	5 or 6
	Pronounced Reduction	9 or 10	7 or 8	6 or 7	5 or 6
Moderately Slow (clay loams, silty clay loams, very granular clay)	Little or No Reduction				7 or 8
	Moderate Reduction	8 or 9	7 or 8	7 or 8	7 or 8
	Pronounced Reduction	9 or 10	7 or 8	7 or 8	7 or 8
Slow (clay, silty clay)	Little or No Reduction				9 or 10
	Moderate Reduction	9 or 10	9 or 10	9 or 10	9 or 10
	Pronounced Reduction	9 or 10	9 or 10	9 or 10	9 or 10

1 Also includes those profiles whose permeability increases in the lower horizons.
2 Commonly includes those profiles with increase of one textural class from A to B horizon, somewhat pervious substrata, etc.
3 Commonly includes those profiles with abrupt, pronounced development in B horizon - increase of more than one textural class from A to B horizon; impervious substrata such as hardpans, strong fragipans, slightly or unfractured bedrock, etc.

Example

In column 1 (above), a sandy soil would fit in line 1 (rapid-sands, loamy sands). Follow line 1 across to column 2 and determine the reduction in permeability in lower horizon that would be caused by a different texture. Example - assume lower horizon texture to be clay at 6 inch depth. This wuld be a pronounced reduction in column 2. A sandy surface soil 6 inches deep with a clay subsoil would give a Profile Permeability Rating of 10.

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RANGE ANALYSIS HANDBOOK

Exhibit 11 (Cont'd)

III. ADJUSTED DETACHABILITY RATING

Determine the adjusted Detachability Index as follows:

1. The Detachability Index for sand is 10.

2. Determine percentage of rock and/or rock fragments on the soil surface 3/4 inch or larger. Example - .30 percent of surface is covered by rock fragments.

3. Multiply percentage of rock fragments on the soil surface (example - 30 percent) times the Detachability Index (example - 10) to arrive at the Adjusted Detachability Index, .30 percent times 10 = 3.

4. Reduce the Detachability Index (10) by the factor for rock fragments (3) to reach the Adjusted Detachability Index Rating of 7.

IV. SOIL ERODIBILITY INDEX

1. Obtain the soil erodibility index by multiplying the adjusted detachability index by the profile permeability index.

2. Adjusted Detachability Index (example 7) times Profile Permeability Index (example 10) = Soil Erodibility Index of 70 - or a Soil Erodibility Class Rating of IV in the following table:

3. Soil Erodibility Ratings:

Soil Erodibility Index	Adjective Rating	Class Rating
0 - 6	Very Low	I
7 - 20	Low	II
21 - 40	Moderate	III
41 - 70	High	IV
71 - 100	Very High	V

V. TOPOGRAPHIC HAZARD CLASS

Slope	Adjective Rating Class	Topographic Hazard Rating Class
0-5%	Low	I
6-20%	Moderately Low	II
21-45%	Moderate	III
46-65%	Moderately High	IV
66%+	High	V

-*

RANGE ANALYSIS HANDBOOK

Exhibit 11 (Cont'd)

The Topographic Hazard Rating Class may be adjusted up or down one full hazard class depending on the length, shape, and roughness of the slope. For example, the topographic hazard would be greater on a long, smooth, convex slope having a 50 percent gradient than on a short, rough, concave slope of the same gradient.

VI. INHERENT EROSION HAZARD

The Inherent Erosion Hazard is an average of the Topographic Hazard Class and the Soil Erodibility Rating. Example - a Topographic Hazard Rating Class of II associated with a Soil Erodibility Rating of IV results in an Inherent Erosion Hazard of III.

Exhibit 12

Part I - Guide for Rating Soil Condition
(For All Types Except Alpine and Low Rainfall Areas)

% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index
0	Highly Variable	0	25	Variable	9	50	Fairly Uniform	17	75	Uniform	30
1		1	26		9	51		17	76		31
2		1	27		9	52		18	77		32
3		1	28		10	53		18	78		32
4		2	29		10	54		18	79		33
5		2	30		10	55		19	80		34
6		2	31		11	56		19	81		34
7		3	32		11	57		19	82		35
8		3	33		11	58		20	83		35
9		3	34		12	59		20	84		36
10		4	35		12	60		20	85		37
11		4	36		12	61		21	86		37
12		4	37		13	62		22	87		38
13		5	38		13	63		22	88		39
14		5	39		13	64		23	89		39
15		5	40		14	65		24	90		40
16		6	41		14	66		24	91		41
17		6	42		14	67		25	92		42
18		6	43		15	68		25	93		43
19		7	44		15	69		26	94		44
20		7	45		15	70		27	95		45
21		7	46		16	71		27	96		46
22		8	47		16	72		28	97		47
23		8	48		16	73		29	98		48
24		8	49		17	74		29	99		49
									100		50

1/ Percent ground cover = basal area of herbaceous plants, moss, lichens, litter, pavement, and rock over ¾ inch diameter.

2/ If the dispersion rating for a site is below that shown in the above table, the ground cover index rating will be dropped (5) points for each dispersion rating below that indicated in the appropriate ground cover index. For instance, if the percent ground cover is 85 percent and the dispersion rating is variable, the GCI will be dropped from 37 to 27 (10 points).

COVER DISPERSION INDEX

A measure of cover dispersion can be obtained by calculating the spread between the second highest and the second lowest percent of bare ground in each 10-plot transect.

Based on this dispersion, the site will be classified as follows:

Difference between second highest and second lowest plots	Cover dispersion classification
0-25%	Uniform
26-50%	Fairly uniform
51-75%	Variable
76% and over	Highly variable

RANGE ANALYSIS HANDBOOK

Exhibit 12 (Cont'd)

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PART II - GUIDE FOR RATING SOIL CONDITION
(For All Types Except Alpine)

Current Erosion Index

		Points
1.	Little or no evidence of soil movement:	41-50

Plant and litter cover adequate for soil protection and well dispersed; rock and pavement where present normal and in place (may have surface covered with lichens); gullies, if present, completely stabilized and healed.

2.	Soil movement slight and local:.	31-40

Isolated bare soil openings characterize this stage. Erosion is confined more or less to the individual bare soil opening. Indicators may include:

a. Wind scouring when soil is dry (particularly after trampling by livestock).

b. Rills are lacking except in the larger interspaces after heavy storm.

c. Some erosion pavement may occur in interspaces on gravelly soils.

3.	Soil movement moderate:.	21-30

Bare soil openings larger and frequently joined together. Earmarks of active erosion may include one or more of the following indicators:

a. Soil hummocking due to lowering of the soil surface in the bare areas.

b. Pedestalling of plants.

c. Erosion pavement evident in gravelly soils.

d. Rills conspicuous after storms.

e. Gullies occasional and moderately active (cutting after heavy storms).

f. Sheet erosion has removed less than half of the "A" horizon.

g. Some noticeable alluvial deposition.

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Exhibit 12 (Cont'd)

PART II - GUIDE FOR RATING SOIL CONDITION
(For All Types Except Alpine)

4. Soil movement advanced: 11-20

Bare ground dominates the site. Advanced erosion is characterized by one or several of the following indicators:

a. Soil loss heavy and continuing with subsoil exposed in places, at least half of the "A" horizon having been lost.

b. Where soils are gravelly, heavy erosion pavement occurs.

c. Gullies frequent and active.

d. Plants pedestalled or partially buried due to dislodging and redeposition of the soil.

e. Wind scouring on exposed sites.

f. Exposure of root crowns and roots of shrubs.

5. Soil movement severe: 0-10

Most of the area bare and uninfluenced by vegetation or litter. One or several of the following indicators will be present under severe erosion:

a. Subsoils largely exposed.

b. Heavy pavement on gravelly soils.

c. Bedrock exposed on "A - C" soils (young, poorly developed soils).

d. Gullies frequent and deep and actively cutting with each storm.

e. Large soil deposits.

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Exhibit 13

Part I - Guide for Rating Soil Condition
(For Alpine Types)
Ground Cover Index

% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index	% Ground Cover	Dispersion Rating	Ground Cover Index
1		0	26		4	51		8	76		18
2		0	27		4	52		8	77		19
3		0	28		4	53		8	78		19
4		1	29		5	54		8	79		20
5		1	30		5	55		9	80		20
6		1	31		5	56		9	81		21
7		1	32		5	57		9	82		22
8		1	33		5	58		9	83		23
9		1	34		5	59		9	84		24
10		2	35		5	60		9	85		25
11		2	36		6	61		10	86		26
12		2	37		6	62		10	87		27
13		2	38		6	63		10	88		28
14		2	39		6	64		10	89		29
15		2	40		6	65		11	90		30
16		2	41		6	66		11	91		31
17		3	42		7	67		12	92		33
18		3	43		7	68		13	93		36
19		3	44		7	69		14	94		38
20		3	45		7	70		14	95		40
21		3	46		7	71		15	96		41
22		3	47		7	72		16	97		43
23		4	48		8	73		16	98		46
24		4	49		8	74		17	99		48
25		4	50		8	75		17	100		50

Highly Variable — Variable — Fairly Uniform — Uniform

1/ Percent ground cover = basal area of herbaceous plants, moss, lichens, litter, pavement, and rock over ¾ inch diameter.

2/ If the dispersion rating for a site is below that shown in the above table. the ground cover index rating will be dropped (5) points for each dispersion rating below that indicated in the appropriate ground cover index. For instance, if the percent ground cover is 85 percent and the dispersion rating is variable, the GCI will be dropped from 25 to 20 (5 points).

COVER DISPERSION INDEX

A measure of cover dispersion can be obtained by calculating the spread between the second highest and the second lowest percent of bare ground in each 10-plot transect.

Based on this dispersion, the site will be classified as follows:

Difference between second highest and second lowest plots	Cover dispersion classification
0-25%	Uniform
26-50%	Fairly uniform
51-75%	Variable
76% and over	Highly variable

RANGE ANALYSIS HANDBOOK

Exhibit 13 (Cont'd)

PART II - GUIDE FOR RATING SOIL CONDITION
(For Alpine Types)

CURRENT SOIL EROSION

		Points
1.	There is no evidence of soil movement.	41-50
	Plant and litter cover is adequate for soil protection and well dispersed. Rock and pavement where present are natural and are in place (lichens are generally conspicuous on natural rock and pavement). There may be a few natural breaks due to natural climatic and topographic conditions.	
2.	Soil movement is slight and local.	31-40
	Isolated bare soil openings or sod breaks characterize this stage. Individually, these bare soil openings do not exceed 4 inches in diameter. Erosion is generally confined to the individual bare soil openings. Once the sod is broken, both wind and surface water enlarge and extend the breaks until subsurface rock material begins to show up.	
3.	Soil movement is moderate.	21-30
	Bare soil openings (sod breaks) are larger and are frequently joined together. Bare soil openings from 4 inches to 18 inches in extend are present. Earmarks of erosion are:	
	a. Cupping out of the bare areas and exposure of rock and erosion pavement.	
	b. Some soil hummocks and plant pedestals.	
	c. Watercourses cutting.	
	d. There may be light scalping on slopes.	
	e. Soil and gravel depositions accompany channel cutting.	

RANGE ANALYSIS HANDBOOK

Exhibit 13 (Cont'd)

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4. Soil movement heavy. 11-20

Heavy erosion is characterized by numerous and continuous sod breaks with the vegetation presenting a patchy appearance. Bare soil openings are generally from 18 inches to 6 feet in diameter. Some indicators that may be evident are:

a. Deep cupping out of the bare areas by land and water on more level areas.

b. Exposure of rock and pavement.

c. Extensive raw banks and cutting in drainageways, especially on slopes above 5 percent.

d. Considerable soil hummocking and plant pedestalling.

e. Terracing of slopes.

f. Moderate to heavy scalping on slopes.

g. Deposition of erosion material.

5. Soil movement severe. 0-10

The bulk of the bare soil openings are over 6 feet in diameter and many of them join in a nearly continuous mass of bare ground. Topsoil has been lost or is being lost from half or more of the area. Indicators of soil loss are the same as under No. 4, except they are at a greater accelerated rate.

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*- Exhibit 14

GUIDE FOR RATING SOIL CONDITION
(For Low Rainfall Types)

This method is designed to be used in areas of low rainfall and is based on Potential Vegetative Productivity rather than ground cover. It's use is limited to the following vegetative types:

(a) Low sagebrush types - Artemisia arbuscula and Artemisia nova types.

(b) Desert Types - Range Types 11 through 18.

(c) Artemesia tridentata wyomingensis.

(d) Pinyon-Juniper.

(e) Artemesia rigida.

(f) Some Artemesia types on granitic soils on the Idaho Batholith, particularly on south facing slopes.

(g) Sites where Poa sandbergii or Danthonia california are dominant.

Use the following method to determine range condition rating for the range types enumerated above:

1. Determine the Vegetative Condition Rating in the normal manner used on other types. Determine the Composition Rating using Exhibit 7. Determine the Production Rating using Exhibit 8. Add the Composition Rating and the Production Rating together to arrive at the Vegetative Condition Rating.

2. Determine the Soil Condition Rating as follows:

a. Determine the Current Erosion Index in the normal manner using Part II, Exhibit 11.

b. Replace the Ground Cover Index Rating with the Percent Potential D&I plants. The Percent Potential D&I plants rating is obtained from the following table:

	Point Rating
Site producing 81-100 percent of potential D&I plants	41-50
Site producing 61-80 percent of potential D&I plants	31-40
Site producing 41-60 percent of potential D&I plants	21-30
Site producing 31-40 percent of potential D&I plants	15-20
Site producing less than 31 percent of potential D&I plants	0-14

3. Add the Current Erosion Index Rating and the Percent Potential D&I Plants Rating together to arrive at the Soil Condition Rating.

The only difference between these two rating methods is that the Ground Cover Rating is replaced with the Percent Potential D&I Plants Rating. It is to be

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Exhibit 14 (Cont'd)

used in desert or desert-like conditions where precipitation is limited. Under these conditions ground cover is usually limited - resulting in low soil condition ratings. The Percent Potential D&I Plants Rating is substituted in the above named low rainfall types in order to arrive at more realistic Soil Condition Ratings. Before using this method, review Section 2.32b for a more complete explanation of the reasons for its use and its limitations.

SPRING MOUNTAIN
TERRITORY MANAGEMENT PLAN
AND
CAPTURE/REMOVAL PLAN
OUTLINE

TERRITORY MANAGEENT PLAN

GOAL

1. THRIVING ECOLOGICAL BALANCE

OBJECTIVES

DEVELOP AML (ESTIMATE)
ADJUST POPULATION TO AML
FERTILITY CONTROL
PROVIDE WATER YEARLONG
PROVIDE FORAGE TO AML, LIVESTOCK AND WILDLIFE
MANAGE FOR QUALITY, ADOPTABLE WH&B

2. SUITABLE RANGE IN SATISFACTORY CONDITION

OBJECTIVES

WATER WILL BE CLEAR AND FREE-FLOWING
MANAGE TO MAINTAIN RANGE IN MID-SERAL STAGE OR LATER
MANAGE TO MAINTAIN RANGE IN RESOURCE VALUE RATING FOR WH&B OF 50 OR HIGHER
HAVE A STABLE OR UPWARD TREND IN SOIL AND VEGETATION BY ? YEARS
ANNUALLY MONITOR WH&B UTILIZATION AND DISTRIBUTION

3. COORDINATE WITH OTHER RESOURCE USES

OBJECTIVES

ESTABLISH/MAINTAIN PARTNERSHIPS TO BENEFIT WH&B
ASSURE HABITAT REQUIREMENTS OF ELK ARE MET
MAINTAIN MANAGEMENT INDICATOR SPECIES HABITAT
MANAGE RECREATIONAL USES SO THAT THE FREE-ROAMING NATURE OF WH&B IS NOT DISRUPTED

ACTIONS

ANIMALS

CENSUS BY AUGUST 15, 1992
GENERAL LOCATIONS, NUMBERS AND BAND STRUCTURE
OBTAIN EXISTING DATA

ACTIONS

HABITAT

INVENTORY BY SEPTEMBER 1, 1992
MAP
RANGE VEGETATION
SUITABILITY
APPARENT TREND
FOR LUCKY STRIKE HERD UNIT AND STIRLING/WALLACE HERD UNIT
NORTH FROM T20S, R56E

INVENTORY WATER SITES
FLOW ESTIMATES (QUALITATIVE)

IDENTIFY KEY, CRITICAL AND PROBLEM AREAS

OBTAIN EXISTING DATA

COORDINATION

PARTNERSHIPS WITH WH&B ORGANIZATIONS

WILD HORSE COMMISSION - KATHY BARCOMB
NATIONAL WILD HORSE ASSOCIATION - DAVE TATTAM
WILD HORSE ORGANIZED ASSISTANCE - DAWN LAPPIN
BLM - ?

COORDINATION WITH WILDLIFE ORGANIZATIONS

NDOW - BUTCH PADILLA, RON LEE
NEVADA WILDLIFE FEDERATION - ?
?

SCOPING - NEPA PROCESS

MUST DO'S ACCORDING TO NEPA

CULTURAL CLEARANCE
TES CLEARANCE

CAPTURE/REMOVAL PLAN

GOALS

1. CAPTURE AND REMOVE WH&B TO AML

OBJECTIVES

CAPTURE AND REMOVE 9 YEAR-OLDS AND YOUNGER

CRITERIA

75% MARES AND FILLIES
25% STALLIONS

75% BAYS AND SORRELS REMOVED
25% BLACKS, PALOMINOS AND PINTOS REMOVED

HOWEVER, AML WILL BE PRIORITY

2. CAPTURE/REMOVE WH&B OUTSIDE TERRITORY/HERD MANAGEMENT AREA

OBJECTIVES

CAPTURE AND REMOVE ALL WH&B
UNADOPTABLE ANIMALS WILL BE PLACED IN ANOTHER HERD UNIT WITHIN THE TERRITORY OR IN ANOTHER TERRITORY

SPRING MOUNTAIN
WILD HORSE AND BURRO
TERRITORY MANAGEMENT PLAN

I. INTRODUCTION

A. Location and Setting

The Spring Mountain Wild Horse and Burro Territory is located in the Spring Mountain Range approximately 25 miles north and west of Las Vegas, Nevada (maps 1 and 2 in Appendix 1). The western boundary of the territory is the Nye/Clark County Line. The western and southern boundaries within Clark County are approximatley bounded by Nevada State Highway 160. The eastern and northern boundries are approximately bounded by Nevada State Highway 95. The territory surrounds what used to be the old Las Vegas Ranger District Boundary.

The Spring Mountain territory encompasses a total of acres. At the time the territory was created, the Bureau of Land Management had administrative control of the entire territory. In 1988, the Nevada Enhancement Act was passed giving the Toiyabe National Forest administrative control of acres, once administered by the BLM. The Mount Charleston Wilderness Area lies within the old Las Vegas Ranger District (map 3, Appendix 1). The remaining acres is still administered by the Bureau of Land Management, Stateline Resource Area (map 4, Appendix 1). Seasonal animal movement occurs between land administered by the BLM and the USFS, therefore, all management actions will be closely coordinated between the agencies.

The Bureau of Land Management and the U S Forest Service each have administrative responsibility for their portions but the territory will be managed as one unit. One agency will have lead responsibility by agreement. The Bureau of Land Management will have lead responsibility within the Red Rock Herd Unit. The U S Forest Service will have lead responsibility within the Stirling-Wallace Herd Unit and the Lucky Strike Herd Unit.

The Spring Mountain Territory is adjacent to the Mt. Stirling Wild Horse and Burro Territory. There is some movement (undocumented) between the Spring Mountain Territory and the Mt. Stirling Territory (map 5, Appendix 1).

B. Background Information

The Spring Mountain Wild Horse and Burro Territory/Herd Management Area Plan is designed to manage the wild horse and burro populations inhabiting the Spring Mountain Wild Horse and Burro Territory/Herd Management Area in accordance with the Title 36 Code of Federal Regulations (Part 222.20) and Title 43 Code of Federal Regulations (Part 4700), the Toiyabe National Forest Land and Resource Management Plan, the Las Vegas District Management Framework Plan, the associated USFS and BLM manuals and handbooks, and the BLM Washington Office Instruction Memorandum No. 83-289. The wild horse

and burro populations will be managed as a component of the U S Forest System Lands and the public lands in a manner that maintains or improves the rangeland ecosystem and promotes a thriving natural ecological balance with all other users and resources. The Territory/Herd Management Plan adheres to the multiple use policy specified in the Wild Free Roaming Horse and Burro Act of 1971 (P.L. 92-195) and the Federal Land Policy and Management Act of 1976 (P.L. 94-579), while maintaining the free-roaming behavior of the wild horses and burros within the Territory/Herd Management Area.

C. Resource Information

1. Wild Horse Population Baseline Data

a. Wild Horse History

Wild horses and burros have been a part of the range environment since the time livestock use began in the area. Homesteaders, miners and travelers along the Mormon trail have used the range to graze livestock, saddle stock, draft horses and burros prior to the turn of the century. Within the last century, area ranchers have used the area to graze domestic saddle and pack stock. Their efforts to improve their horses are evident today in coloration and confirmation of the wild horses inhabiting the areas. The population in the Stirling-Wallace Herd Unit is approximately 25% paint. The population in the Lucky Strike Herd Unit is approximately 10% black and has draft horse characteristics. The population in the Red Rock Herd Unit is approximately 40% palomino.

Prior to the Wild Free Roaming Horse and Burro Act of 1971, populations were kept under control by ranchers and others who would remove wild horses and burros for saddle or pack use or for sale to the slaughterhouse. As a result of the protection, the populations in the area have dramatically increased creating conflicts with other resources and uses.

The first wild horse and burro population censuses occurred in 19xx. Censuses have occurred since that time and numbers counted are shown in Table 1. The latest census data is located in Appendix 2, Table 1.

Table 1. Census Data for Spring Mountain Wild horse and Burro Territory/Herd Management Area, Clark County, Nevada.

ADD TABLE

b. Present Situation

Wild horse and burro habitat within the Spring Mountain Territory/Herd Management Area administered by the Toiyabe National Forest was analyzed for vegetative community type, suitability (Wild Horse Suitability Criteria, Appendix 3), and

apparent trend in 1992. Preliminary results indicate both forage and water are limiting. Forage production seems to be limited to burn areas and water available within the territory/herd management area is limited to a few perennial springs and creeks and several ephermal seeps. A list of available water sources and their flow rates is in Appendix 2, Table 2. Water sources outside the territory within the old Las Vegas Ranger District are currently being used by an estimated 1xx wild horses. A list of water sources outside the territory and their flow rates is in Appendix 2, Table 3.

Detailed records of the range analysis are available at the Las Vegas Ranger District office.

Wild horse use areas and seasons of use are shown in Map ?, Appendix 1. Six broad use areas occur within the territory: Cold Creek, Lower Deer Creek, Trout Canyon, Wallace Canyon, Wheeler Wash and Wheeler Pass. Wheeler pass is summer and fall range. The other areas appear to be used as yearlong habitat with seasonal movements along the elevational gradient of the area.

Cold Creek Use Area

Cold Creek use area is an 11,000 acre burn of which 5,000 acres is within the Spring Mountain Territory. The area burned in 1984 and was seeded with a mixture of Crested Wheat, Intermediate Wheatgrass and Smooth Brome. The seeding was highly successful. Surrounding the burn on the lower elevations is blackbrush-joshua tree and low elevational washes. As the elevation increasess, the communities surrounding the burn grade into Pinyon-Juniper with sagebrush-cliffrose as the dominants. As the elevation increases further, the Pinyon-Juniper understory is dominated by Curlleaf Mountain Mahagony and Gambel's Oak.

Two flowing creeks are within the use area, Cold Creek and Willow Creek. The primary water source, however, is the Cold Creek diversion ditch and its three ponds. The area adjacent to the ditch and ponds is the wild horse's primary range. This area receives moderate to heavy use and is presently in a downward trend. Water availability elsewhere within this use area is located in areas either heavily used by recreationalist or outside the wild horse territory.

During the summer of 1992, as many as 28 individuals where seen using the area at one time. All identified area bands were within one mile of the Cold Creek Diversion ditch and ponds at every observation. This area is used as year-round habitat for wild horses and as winter habita for approximately 170 elk.

Lower Deer Creek Use Area

Lower Deer Creek use area is within several habitat types. In the lower elevations, the vegetative type is Blackbrush and

Joshua Tree with low elevational washes and their subsequent communities. Several small burns (<100 acres) are within this community. The burns are in lower seral stages, typically weedy annuals with smaller proportions of the shrub species.

Lower Deer Creek spring/seep is within this community on Forest System lands. Grassy and Grapevine springs are also within this community but are located on public lands.

The Blackbrush-Joshua tree community grades into a Pinyon-Juniper community with a dominant understory of sagebrush and cliffrose. This grades into another pinyon-juniper community with the dominant understory of curlleaf mountain mahagony.

Wild horses have been observed in the area. The forage preference is unknown as the communities are dominated by typically unpalatable species for wild horses. Trend was not apparent throughout most of this area. A few instances of downward trend exist within the pinyon-juniper with sagebrush-cliffrose understory. The wild horses use this area on a year-round basis, moving to the lower elevations during the winter.

Water sources associated with the pinyon juniper community types are outside the territory and within the Mt. Charleston Wilderness.

Trout Canyon Use Area

Trout Canyon use areas is dominated by low elevational vegetative types, blackbrush-joshua tree, blackbrush-mormon tea and the low elevational wash communities. Wild horse sign has been observed in the area, but the forage species are uncertain. The area is dominated by Rosaceae, normally considered unpalatable forage for wild horses. In this area, as the elevation and slopes increase in excess of 45%, wild horse suitability decreases.

Kiup spring is the available water source for the area.

Wallace Canyon Use Area

Wallace Canyon use area is dominated by low elevational vegetative types, primarily, blackbrush-joshua tree and pinyon-juniper with the dominant understory of sagebrush and cliffrose. There is a several hundred acre burn within the area where the wild horses seem to congregate. This area is showing a downward trend in soil stability. As the elevation and slopes increase in excess of 45%, wild horse suitability decreases. The area has a few high elevational wash commuity types but these areas are surrounded by range unsuitable for wild horse use. The high elevation areas are used as summer habitat and as access to water source. The low elevation areas are used as year-long habitat.

A stock pond west of Carpenter Canyon provides the water source for this area. The water is piped from Carpenter Creek on Forest System lands (outside the Territory) to public lands. The pond is located in the ecotone between blackbrush joshua and creosote bush communities.

Wheeler Wash Use Area

Wheeler wash use area has low elevational wash community types that grades into the high elevational wash community type. Adjacent to the wash is blackbrush-joshua tree community in the low elevations and pinyon-juniper with a sagebrush understory in the higher elevations. These areas and the surrounding area are primarily suitable range for wild horses. The lower part of the wash appears to be in satisfactory condition. In the higher elevational washes and adjacent communities, the range condition is in a downward trend. This area is used as year-round habitat but during the coldest parts of winter the wild horses do move to lower elevations.

The primary water source in this area is Wheeler Well. A stock tank and its run-off provide a good water source year round. The area within a half mile of Wheeler Well is a downward trend. Sagebrush is decadent and trampled and Blue Grama is almost missing from the community. This could be due to grazing pressures from livestock and wild horses and from recreational livestock use of the area. People and cattle have turned the area adjacent to the well into a parking lot. A secondary water source is Buck spring.

Wheeler Pass Use Area

Wheeler pass use area is a 15,000 acre burn. The area burned in 1960 and was seeded. Remenants of crested wheat and intermediate wheat can be seen today. The high elevational portions of the burn are not suitable for wild horse use because of steep slopes and areas that are outside the territory. The lower elevations of the burn are dominated by Ceonothus, Gambels' oak, Garrya, and sagebrush. The area surrounding the burn is dominated by Pinyon-Juniper with Gambel's Oak and mountain mahagony understory. The vegetative communities within this area are being severely overused by livestock, elk and wild horses. Animals have trampled shrubs to access grasses (Crested Wheat, Intermediate Wheat and Indian Rice Grass) growing within its canopy. Blue grama grows outside the protective canopy of shrubs. The individuals are decadent and have low seed production. This area is used seasonally as summer and fall range with the horses migrating into Wheeler Wash during the winter and staying through early spring.

The primary water source is also Wheeler Well. Horses are also using Trough Spring, but it is outside the Territory. Cougar spring is a secondary water source.

Five use areas occur outside the wild horse territory within the old Las Vegas Ranger District and Mt. Charleston Wilderness: Lee Canyon, Upper Deer Creek, Clark Canyon, McFarland Canyon and Willow Peak. These areas are used primarily as summer and fall range and to access water sources.

Areas outside the territory that are currently being used are typically unsuitable range for wild horses due to the increased occurrnce of sensitve plants, steep slopes and highly erodible soils. The wild horses are using these areas as summer and fall range or to access water sources. The horses using Lee Canyon are using a meadow area and an adjacent seeded ski slope. The horses have had a history of entering Lee Canyon either through lower Lee Canyon/Macks Canyon area or through McFarland Canyon. We also have an unconfirmed report the horses are entering the area through Clark Canyon. Management efforts to keep wild horses out of Lee Canyon include a fence and a cattle guard at the junction of Nevada State Highway 157 and 158. A fence will also be constructed in the narrow portion of McFarland Canyon to prevent wild horses using it to access not only Lee Canyon, but also Mt. Charleston Wilderness. A trip is planned to confirm if wild horses are using Clark Canyon to access the wilderness and Lee Canyon.

Wild horse use has been recorded within upper deer creek area as high as Mummy Spring. These horses have yet to be photographed and therefore not included within the 1992 census of problem animals.

Wild horse sign has been observed in Macks Canyon and lower McFarland Canyon (Mud Springs area), but individuals have not identified and therefore have not been included within the problem animal census. Wild horse use in this area is a concern due to the high occurrence of sensitive plants.

Wild horse use has been observed on Willow Peak. The area is part of the Wheeler Pass Burn. There are no known springs within the area. This area has slopes in excess of 50% and highly erodible soils. The area has not been censused for sensitive plants, but it is assumed that some species occur within this area.

Population Demographics

Little specific demographic data on the Spring Mountain Wild Horse and Burro herds is available. Information on age structure is derived from gathered wild horses across the state of Nevada. We are assuming a similar age structure exists in the Spring Mountain Territory. As information becomes available for the Spring Mountain Territory, it will be incorporated into the existing data.

It is admitted, age structure is useful in determining the direction a population is headed. For example, a population with many young animals and few older animals is an increasing population. In opposite, a population with many older animals and few young animals is a decreasing population. It is assumed that these wild horse populations are increasing within the Spring Mountain Territory due to the dramatic increase in animal numbers since the Act. Survival rates and rates of reproduction are also important as these factors of population demographics give insight to the health and vigor of the population.

Once demographic data is available, computer programs will be utilized to determine age structure, reproductive and survival rates for the Spring Mountain Territory populations.

Band structure within the territory is derived from census data and field observations. Band sizes range from 1 to 15 individuals. Band size may increase or decrease depending on the environmental conditions within an area. In drought situations, band sizes decrease. In high precipitation years, band size increase. This may be due to increased reproductive rates.

Bands typically have one herd stallion and as many as three immature (satalite) stallions, usually three years old or younger. The remainder of the band is made up of mares and offspring. This information is based on the bands in Cold Creek, Wheeler Pass and Lee Canyon. Sex of animals is difficult to observe in other bands due to their decreased tolerance to people and vehicles.

The condition of the horses vary depending on the area. Bands whose home ranges concentrate in burns or seedings are in better condition than bands located in the other areas where forage production is lower, such as blackbrush-joshua tree, pinyon-juniper or wash communities. Bands in the Stirling-Wallace Herd Unit appear to be in the worst condition due to the lack of forage and excess numbers of animals. The area is presently coming out of a 6 year drought. Many animals within this area died. The condition this year appears to be better, but is by no means close to good.

2. Other Resources and Uses

The Spring Mountains are one of the recreational outlets for the Las Vegas area. As a result, there is a high demand for quality recreational experiences. With the increasing population in the Las Vegas valley, recreational pressures are increasing on the Spring Mountains.

Lower Deer Creek use area and Lee Canyon use area receive over one million visitor days per year. The conflict between the recreational traffic and the free-roaming nature of the animals is a concern in regards to human and animal safety. Animals are often within yards of Nevada State Highway 157 and several

accidents have occurred in the past with motorists killing wild horses or burros as they cross the road.

Cold Creek use area has two of the three flowing streams in the Spring Mountains: Cold Creek and Willow Creek. The streams are accessible to motorists unlike the third stream, Carpenter Creek which is only accessible to four-wheel drive vehicles. Recreationalists tend to "camp" on the water sources making them less accessible to the wild horses. Vehicle traffic is also a concern within this area.

Wheeler Wash use area and Wheeler Pass use area are the main recreational areas for the community of Pahrump, Nevada. Recreationalists in this area also "camp" on water resources. This area receives a high use of all terraine vehicles.

Livestock grazing occurs within the Stirling-Wallace Herd Unit. There is direct competition for forage and water resources between livestock and wild horses. The amount of the resource overlap is uncertain.

A large elk herd occuppies the Cold Creek area and the Wheeler Pass area. The elk and wild horses are in direct competition for forage and water. This resource overlap is also uncertain.

The Spring Mountains have a high occurrence of endemic plants and animals. Many of the endemic plants are listed as "sensitive" species and require special management. Wild horse impacts to each "sensitive" species are unknown.

CHAPTER ONE

GOALS AND OBJECTIVES

Goals and objectives have been developed from land use planning documents, including Toiyabe National Forest Land and Resource Management Plan, Clark County Management Framework Plan and the Strategic Plan for Management of Wild Horses and Burros on Public and National Forest System Lands.

Toiyabe National Forest LMP Goals:

1. Manage wild free-roaming horses and burros to maintain a thriving ecological balance

2. 95% of rangelands will be brought into satisfactory condition.

3 Management plans will be completed for wild and free-roaming horse and burro territories. (TOFLRMP IV-4).

Objectives:

1. Livestock permittees, other federal and state agencies and interested parties need to be involved in the development of territory management plans (TOFLRMP IV-28).

2. Wild free-roaming horses and burros will be managed to population levels compatible with resource capabilities and requirements (TOFLRMP IV-31).

3. Rangelands need to be maintained or become in satisfactory condition which is defined as:

   a. having a resource value rating (RVR) of 50 or above for vegetation or other features;

   b. being in mid-successional or higher class of ecological status;

   c. and having a stable or upward trend in soil and vegetation (TORLRMP IV-27).

   In order to achieve this, forage utilization standards for all uses have been developed:

   40% in grasslands in unsatisfactory condition
   45% in grasslands in satisfactory condition

   30% in shrublands in unsatisfactory condition
   40% in shrublands in satisfactory condition

   These standards will be used as maximum total allowable utilization for all grazing animals. More restrictive utilization standards may be designed for each unit (TOFLRMP IV-28).

To insure these standards are met and rangelands are maintained or progressing towards satisfactory condition, monitoring and evaluation will be conducted in accordance with FSH 2209.21, Range Environmental Analysis Handbook, and the Nevada Rangeland Monitoring Handbook (TOFLRMP VI-26).

BLM Clark County MFP Goals:

1. Wild horses will be managed in the Spring Mountain Range for population size that occurred in 1983. Populations can be adjusted based on data generated through the monitoring process.

2. Develop Herd Management Area Plans.

3. Insure that wild horse and burro habitat as well as the animals are managed in a manner designed to realize multiple land use objectives. (MFP 180).

4. Determine population levels of wild horses and burros in Herd Management Areas through a range monitoring system and the Coordinated Resource Management and Planning process (MFP 181)..

5. Insure water remains available for wild horse/burro at those water sources where use has been identified (MFP 183).

6. Improve habitat for wild free-roaming horses/burros in designated Herd Management areas (MFP 185).

The Strategic Plan for Management of Wild Horses and Burros on Public Lands Goals:

1. Wild horse and burro populations and their habitat will be perpetuated and protected in accordance with the principles of multiple-use management.

2. Establish and maintain parternships and cooperative relationships to benefit wild horses and burros.

Objectives:

1. Increase program emphasis on wild horse and burro habitat, census, monitoring and herd management plans.

2. Establish appropriate management levels for all herd areas/territories by 1995.

3. Adjust population levels to meet AMLs within six years.

4. Enter into agreements with appropriate groups to participate in habitat improvement projects, monitoring and to help gather and care for animals.

The management goals and objectives identified provide guidance based on policy and regulation. To implement these goals and objectives the following goals and objectives have been developed for the Spring Mountain Wild Horse and Burro Terriory/Herd Management Area Plan.

GOAL 1 - Maintain a Thriving Ecological Balance

Maintain a thriving ecological balance between wild horses and their resource requirements and a balance among the other resource uses and needs within the territory.

Objectives:

1. Develop Appropriate Management Levels (AML). Initially, these levels will be estimated from range vegetative inventory and range suitability collected in 1992 for Lucky Strike, and the northern portion of the Mt Stirling-Walllace Canyon herd units. Range vegetative inventory and suitability will be completed for the southern portion of the territory in 1993. As information becomes available through monitoring and the completion of the forage partitioning project, AMLs may be adjusted.

2. Adjust Population Levels to AMLs by 1993. This will be completed through gathers of wild horses occupying and using non-horse areas. Excess animals above initial AMLs (1983 population levels) will be gathered and removed. AMLs will be adjusted, up or down, based on monitoring implemented with this plan. Capture plans will be completed for each use area.

3. Establish Fertility Control. Fertility control will be utilized to maintain wild horses at AML.

4. Provide Water and Forage Resources to Meet AML Needs. This will be accomplished through monitoring water resources and forage production amd utilization.

?? 5. Quality, Adoptable Wild Horses and Burros. Define quality adoptable animals. Animals with gross deformities or disease will be eliminated from the herd.

GOAL 2 - All Suitable Range in Satisfactory or Desired Condition

Satisfactory condition and desired condition will be determined for each use area based upon direction given in the Toiyabe National Forest Resource and Land Management Plan and the resource needs. Suitable range not in satisfactory condition or desired future condition will be brought into such condition. Range in satisfactory or desired condition will be maintained in that condition.

Objectives:

1. All water sources will be clear and free-flowing where practicable. All water sources will be inventoried within the territory and classified as to their condition. Water rights will be obtained through the state engineer on all water sources necessary to maintain AMLs of wild horses and burros will be under the control of the Forest Service by 1995.

2. Ninety-five (95) percent of the territory will be in desired future condition by the year 2000.

3. Resource Value Rating will be maintained at or achieve a 50 or higher on suitable range. RVR will be inventoried on all suitable range. Range with an RVR of less than 50 will be managed to achieve RVR of 50 by the year 2000.

4. Range and soil in a downward trend will be reveresed and show a stable or upward trend by the year 1996. Stable trend will be maintained or move upward by the year 1996.

GOAL 3 - Coordinate Resource Uses and Publics

State and Federal agencies and interested parties will be involved in the creation, implementation, monitoring and evaluation of this plan to better improve wild horse and burro management. Coordination with interested resource affliates will improve multiple-use land management within the wild horse and burro territories.

Objectives:

1. Develop cooperative agreements and MOUs to implement habitat projects and monitoring of wild horse and burro populations.

2 Determine habitat requirements of current wildlife population levels. Manage the range within the territory to maintain the current wildlife population levels.

3. Determine habitat requirements for the Management Indicator Species (MIS) within the territory. Manage the range within the territory to maintain or improve the current MIS population levels.

4. Manage the range within the territory to maintain or increase all threatened, endangered, and sensitive species and their habitat. Implement management strategies and actions which will result in the identified species being removed from the list.

5. Manage developed and dispersed recreation use to minimize impacts to the wild free-roaming nature of wild horses and burros.

6. Coordinate wild horse and burro planning with recreation planning to insure that developed and dispersed recreation activities do not limit wild horse or burro access to water.

7. Prevent wild horses and burros from entering and impacting the Mt. Charleston Wilderness area.

8. Implement the coordinated forage partitioning study to determine what and how mush of each forage species is being consumed by each grazing ungulate by the year. Results of the study will identify forage overlap and forage/habitat competitions. Study will be finalized in report form so recommendations can be implemented by 1996.

Welcome to the Las Vegas Ranger District

The Las Vegas Ranger District of the Toiyabe National Forest is located west of Las Vegas in the Spring Mountain Range. Easily accessible by state highway, it covers nearly 316,000 acres. The District contains five eco-zones ranging from the Southern Desert Shrub Zone to the Pseudo-Alpine Zone. Elevation ranges from 4,500 feet to 11,918 feet on the Charleston Peak. This high mountain country is a green jewel in the southern Nevada sun, providing escape from the summer desert heat and a refreshing contrast to the lights and sounds of the city of Las Vegas. This mountainous, forested environment is unique with no similar environment within hundreds of miles.

The area is referred to locally as Mt. Charleston. Charleston Peak is the highest mountain in the Spring Mountain Range and one of the highest peaks in Nevada.

The Las Vegas Ranger District was originally designated as the Charleston Forest Reserve in 1906. It became part of the Vegas National Forest, which also included the Sheep Mountain Range, in 1907. In 1908 the name was changed to the Moapa National Forest but, in 1915, it was combined with the Toiyabe National Forest and renamed. One year later, jurisdiction was transferred from the Toiyabe National Forest to the Dixie National Forest, headquartered in Utah.

Management of the Spring Mountain area returned to Nevada in 1937 when the area was incorporated into the newly created Nevada National Forest. Finally the area became what is currently the Las Vegas Ranger District in 1957 when the Nevada National Forest was reabsorbed by the Toiyabe National Forest.

THE FOREST SERVICE MISSION:

"CARING FOR THE LAND AND SERVING PEOPLE"

This involves taking care of the land while making the forest resources available to all "shareholders." Resources include high quality water, wilderness and outdoor recreation; quality habitat for many plants and animals; wood for paper, homes and hundreds of other uses; forage for wildlife, livestock, wild horses; minerals.

VISION STATEMENT FOR THE LAS VEGAS RANGER DISTRICT

We the dedicated managers of the Las Vegas Ranger District, in cooperation with our customers, are committed to accepting the challenge of growth and change by providing consistent quality experiences and meeting customer expectations.

From: All of us!

WHAT THE FOREST SERVICE IS ALL ABOUT

The USDA Forest Service is charged with the care of the nation's forests and rangelands. We serve the needs of people of the nation—the owners of the forest. The Forest Service is a leader in conservation; cooperates with the individual states to assist private landowners in applying good forest practices on their own lands. We are also involved in research to find better ways to manage the nation's natural resources.

PARTNERSHIPS

We are all indebted to the volunteers who work with us on the Las Vegas Ranger District. Through their hard work and cooperation much is accomplished. Volunteers do all kinds of things: act as wilderness information specialists; visitor information center workers; construct campground and picnic sites; advise interdisciplinary teams; clear and maintain trails; and serve as campground hosts. If you would like to become a volunteer, it is as simple as asking!

Thanks

CLIMATE

While summer temperatures often soar to well over 100 in Las Vegas, daytime mountain temperatures typically range from the 80's to the 90's, dropping to the low 40's at night. Winters are moderate with heavy snow in the mountains and light snow in the lower elevations. Precipitation occurs mainly as snow in the winter and thundershowers in the summer.

Visitors should come prepared for extreme changes in temperatures and weather by bringing appropriate clothing for snow, rain, cold, and heat, particularly on overnight trips in the mountains. Snowtires are often needed in the winter months. Check with Nevada Department of Transportation for road conditions.

MULTIPLE USE

Employees of the Las Vegas Ranger District care for the National Forest lands and resources they administer as they serve you and other customers of the National Forests. They strive to make forest resources available to all "shareholders." These resources include wilderness and outdoor recreation; high quality water; quality habitat for many plants and animals; forage for wildlife, livestock, and wild horses and burros; minerals; and wood for heating homes.

CULTURAL RESOURCES

Many archaeological and historical sites are found throughout the District. Archaeological findings in the Spring Mountains indicate that prehistoric people roamed these lands during the last of the Pleistocene Glaciation, some 8 to 10 thousand years ago. The Anasazi Indians, who came much later, raised squash and corn in the Moapa Valley, 60 miles northeast of Charleston Peak. These people probably hunted game and gathered pine nuts in the Spring Mountain Range.

One of Coronado's Spanish Divisions may have passed this way as early as 1540. This country was once a Spanish ranchero called the Las Vegas de Quintana (The Meadow of Quintana). Spanish missionaries pioneered the route called the Old Spanish Trail searching for a route to California through the southern part of the Ranger District.

These cultural resources can be enjoyed as part of the recreational experience, but care should be taken to leave the resources in the same condition as you found them. Archaeological and historic sites are protected from destruction and vandalism by federal and state laws. If left undisturbed, all can enjoy them.

GRAZING

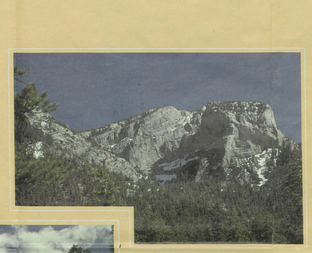
Livestock grazing is one multiple use on the District. Livestock operators graze their cattle there during the spring, summer, or fall but use private or adjacent Bureau of Land Management range during the seasons their cattle are not grazing on the Las Vegas Ranger District.

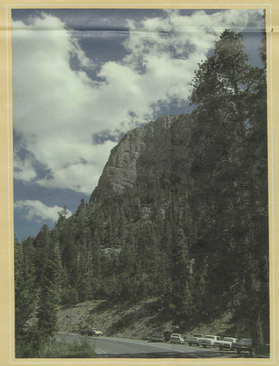
WOOD PRODUCTS

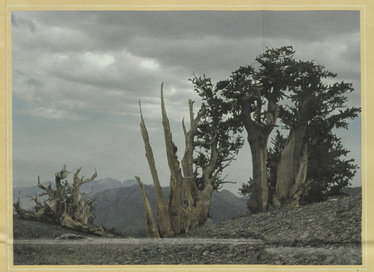
Firewood is the only wood product harvested from the Ranger District. A permit must be purchased prior to firewood removal.

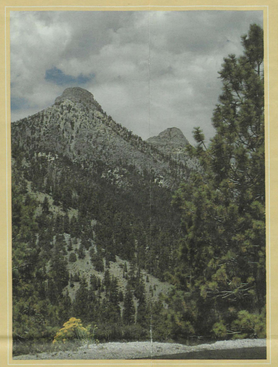
FOREST FIRES

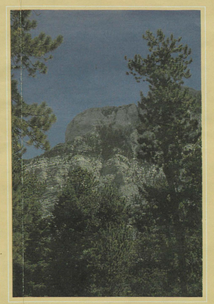
About 50 wildfires burn on the Las Vegas Ranger District each year. Approximately 38 percent of them are human caused. Please use caution with fires, vehicles with catalytic converters, and machinery or tools that may cause sparks. Remember too that possession of FIREWORKS is not allowed on a National Forest. If you see smoke or fire, please call the fire dispatcher at 647-5090 in Las Vegas.

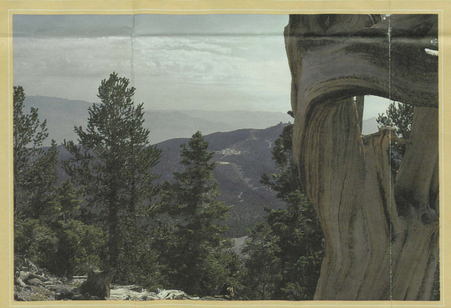


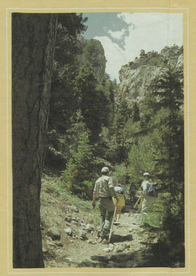












WILDHORSE AND BURRO TERRITORY

There are three wild horse and burro territories on the District. The largest is the Spring Mountain Wild Horse Territory in the southern two-thirds of the District. The best places to see wild horses are the Wheeler Well area on the west side of the Spring Mountain Range and Cold Creek area on the northeast side of the District. The Mt. Stirling and Last Chance Wild Horse and Burro Territories are both located on the northeast one-third of the District. The best locations to see wild horses in these areas are the Crystal Spring area and north towards Mercury on Bureau of Land Management land. The wild horse herd on the north end of the District are 25 percent paints. The herd on the south end of the District is 40 percent palomino. Bays and sorrels dominate the rest of the herds.

WILDERNESS

The 43,000-acre Mount Charleston Wilderness Area was created on December 5, 1989, as part of the Nevada Wilderness Protection Act. This Wilderness centers around Charleston Peak and is characterized by densely covered ponderosa and bristlecone pine forests. The forests are interrupted by massive limestone cliffs and a range crest that includes the only peaks above timberline in the southern Great Basin. The great vertical relief of the Wilderness and its relative isolation from other comparable ranges, makes the area an ecological island with a wide range of life zones and habitats.

A trail provides access to Charleston Peak. Its 11,918-foot elevation makes it the most climbed major mountain in Nevada.

HUNTING

Big game species on the District include elk, deer, desert bighorn sheep, and mountain lion. Upland game birds include chukar, scaled quail, gambels quail, turkey, grouse, and mourning dove. Contact the Nevada Department of Wildlife for hunting regulations.

THREATENED, ENDANGERED AND SENSITIVE SPECIES

The District has 48 plant species that are found no where else in the world. Several are on the Forest Sensitive Plant list. The Palmers chipmunk is unique to the Charleston Peak area. It is listed as a sensitive species for the Forest. Desert tortoise also make their home on the District. Other possible Theatened, Endangered and Sensitive Species include the Mexican spotted owl, the spotted bat, and the flammulated owl.

SCENIC LOOP DRIVE

The Spring Mountain Scenic Loop Drive is a 3-hour drive from Las Vegas, elevation 2,200 feet, to the pure mountain scenery of the Toiyabe National Forest. First follow U.S. Highway 95 north, then travel on either State Highway 157 or 156. Paved roads reach 8,500-foot elevation in Lee Canyon. A 30 degree temperature change refreshes and cools the visitor. State Highway 158 through Deer Creek provides the link between Kyle and Lee Canyons. This scenic loop drive combines scenes of the mountains and forest with the panoramic view of miles of desert. Campgrounds, picnic areas, a ski area, and two lodges provide opportunities for picnicking and the numerous trails are great for short hikes.

CAMPING AND PICNICKING

There are five developed campgrounds, three developed picnic areas, two group recreational vehicle campsites, and three day-use group reservation sites on the Las Vegas Ranger District. All are accessible by paved state highways. All developed sites are in Kyle Canyon, Lee Canyon, and along Deer Creek. These sites are approximately 40 miles from Las Vegas and are generally open from May through September. All campgrounds have water, toilets, tables, garbage service, and fire rings or barbecues. Fees are charged at all of these sites. Use of group day-use sites is by reservation only and reservations can be made for some single family campsites. Call MISTIX at 1-800-283-2267 to make reservations. Camping is limited to 16 days at all campgrounds and dispersed camping areas.

WINTER SPORTS

There are many winter recreation opportunities on the Las Vegas Ranger District including downhill skiing, cross-country skiing, sledding, snowshoeing and, to a limited extent, snowmobiling.

The Lee Canyon Ski Area, located at the end of State Highway 156, is just 47 miles from Las Vegas. The base elevation is 8,510 feet and has an almost ideal climate. The snowmaking system allows skiing from Thanksgiving through Easter. There is a lodge, ski school, ski rental, coffee shop, lounge, and ski shop. Three double-chair lifts carry skiers to over 40 acres of maintained ski slopes. Vertical elevation difference is 1,000 feet.

Cross-country skiing opportunities abound in the Mt. Charleston area. The most popular areas are in Lee Canyon around the Foxtail snowplay area and Old Mill picnic area.

Sledding and general snowplay activities take place in the Foxtail snowplay area in Lee Canyon. This snowplay area is the Foxtail day-use group reservation area in the summer and provides parking, toilet facilities, fire rings, picnic tables, and three designated sledding runs for winter enjoyment.

Topography and elevation limit snowmobiling opportunities. The steep narrow canyon, private land, developed recreation sites, and the limited access to Kyle Canyon, Lee Canyon, and the Deer Creek areas restrict snowmobiling opportunities. Areas like Macks Canyon and Harris Springs are accessible with favorable topography. There isn't sufficient snow cover winterlong because of the lower elevations.

SAFETY

Enjoy your visit to the Las Vegas Ranger District but don't take risks. Observe safety precautions and use good common sense in all your outdoor activities on the Forest. Remember changes in temperature and weather conditions are common on the mountains. Plan your outing accordingly.

BACKCOUNTRY RECREATION

The Las Vegas Ranger District provides a variety of opportunities for numerous backcountry experiences such as hiking, wildlife observation, photography, hunting, horseback riding, mountain biking, dispersed camping, and picnicking. For your safety as well as the protection of the resources, certain procedures should be followed:

—Be careful with fire. Find a safe, clear area to build your fire and make sure the ashes are cold to your touch before you move on.

—Be careful when smoking in the woods. Clear a spot to bare dirt to extinguish your cigarette.

—Wear bright colors during hunting seasons.

—Bury human waste far from water sources. Pack out unburnable refuse and practice "No Trace" camping techniques.

—Water in some streams and springs may not be suitable for drinking. To be safe, boil drinking water or bring water from home.

—Off-road vehicle travel is not permitted on the National Forest. Check with the Las Vegas Ranger District office for limitations of motorized vehicle travel.

A variety of trails provide backcountry access. The main trails to Charleston Peak are accessible from the Cathedral Rock picnic area and the trailhead on State Highway 158. Shorter, day-hike trails are accessible from Cathedral Rock picnic area and various points along State Highways 156, 157, and 158 in Kyle and Lee Canyons and in Deer Creek. Trailheads and trails are shown on this map. Specific trail information can be obtained at the Las Vegas Ranger District office.

TREAD LIGHTLY!

HOW TO TREAD LIGHTLY

- **Obtain travel information** from a Forest Service office or other public land agencies. Learn the rules and follow them.
- **Avoid** running over young trees, shrubs, and grasses—damaging or killing them.
- **Stay off** soft, wet roads and trails readily torn up by vehicles (particularly during hunting seasons). Repairing the damage is expensive.
- **Travel around** meadows, steep hillsides, or streambanks and lakeshores easily scarred by turning wheels.
- **Resist** the urge to pioneer a new road or trail or to cut across a switchback.
- **Stay away** from wild animals that are rearing young—or suffering from food shortage. Stress can sap essential, scarce energy reserves.
- **Obey** gate closures and regulatory signs. Vandalism costs all of us.
- **Stay out** of Wildernesses. They're closed to all vehicles. Know where the boundaries are.
- **Get permission** to travel across private land. Respect landowner rights.

Future opportunities for exciting travel with your recreation vehicle are in your hands, so—**TREAD LIGHTLY!**

SIGNS

The boundary of Travel Restricted Areas may be marked as shown below; also refer to Road, Trail and Area Restrictions:

ENTERING TRAVEL RESTRICTED AREA

LEAVING TRAVEL RESTRICTED AREA

Other signs you may encounter are:

SYMBOLS

TWO-WHEEL MOTOR VEHICLE

SEDAN

HIGH CLEARANCE VEHICLE 4x4 AND PICKUP

ALL-TERRAIN VEHICLE

SNOWMOBILE

Symbol with RED SLASH indicates activity not allowed. Symbol with YELLOW SLASH indicates activity not recommended.

BICYCLES

NATIONAL FOREST ROUTE MARKERS

TRAVEL MANAGEMENT POSTER

This Area is Open To:

MOTOR VEHICLES

CLOSED TO ALL OTHER USES

TO RETURN ROAD OR TRAIL TO ITS ORIGINAL CONDITION

Toiyabe National Forest

13

Roads maintained for LOW clearance vehicles, such as sedans, trailers and motorhomes.

214

Roads suitable for HIGH clearance vehicles, such as 4x4 and pickup.

REFER TO MAP FOR SPECIFIC VEHICLE & ROUTE DESIGNATIONS!

NO-TRACE CAMPING

Trail travel tends to concentrate camping use. You can help preserve the natural setting and quality of the areas by practicing no-trace camping. By practicing no-trace camping techniques, hikers and horsemen leave the landscape appearing untouched when they move on their way. Check with Forest Service offices for more no-trace camping ideas.

Sanitation
Keep soaps and detergents out of lakes and streams. Wash dishes and clothes in a pot and dispose of the waste water on rocky soil at least 100 feet from the nearest water supply. Bathe in the same manner. Do not bathe in lakes or streams. Protect your drinking and cooking water.

Toilets
Locate toilets at least 100 feet from the nearest water supply. Dig a small, 6-inch deep hole and cover after use.

Trash
Do not bury trash. Burn it or pack it out.

Pack Stock and Horses
Pack and saddle stock can seriously damage soil and vegetation if not properly cared for. Pack in a good supply of ration pellets—forage is scarce in many areas. Don't tie stock to trees—they can kill the tree by pawing up roots and stripping bark.

Campsites
Never camp in meadows or soft grassy areas that compact easily. Pick a place where you won't have to clear vegetation or level a tent site. Before leaving camp, naturalize the area. Try to make the site look as if no one had been there.

Traveling
Don't pick flowers, dig up plants, cut live branches from trees, or take shortcuts off the trails.

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

TOIYABE NATIONAL FOREST

LAS VEGAS RANGER DISTRICT

VISITOR MAP

NEVADA
MT DIABLO MERIDIAN

1991

Scale 1½"=1 Mile

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

CONTOUR INTERVAL 50 METERS
SPOT ELEVATIONS IN METERS

DECLINATION DIAGRAM

Mn

13½°
240 mils

1991 MAGNETIC DECLINATION (MN) AT CENTER OF MAP. DIAGRAM IS APPROXIMATE

CONVERSION TABLE

Meters	Feet
1	3.2808
2	6.5617
3	9.8425
4	13.1234
5	16.4042
6	19.6850
7	22.9659
8	26.2467
9	29.5276
10	32.8084

To convert meters to feet multiply by 3.2808

To convert feet to meters multiply by 0.3048

LEGEND

- National Forest Boundary
- State Boundary
- County Boundary
- Special Area Boundary
- Wilderness Boundary
- National Conservation Area Boundary

ROUTE MARKERS

- Interstate
- U.S.
- State
- County
- National Forest, Well Maintained for automobiles
- National Forest, Maintained for automobiles
- National Forest, Not Maintained for automobiles
- National Forest Trail
- Primary Highway
- Secondary Highway
- Improved Road, Paved
- Improved Road, Gravel
- Improved Road, Native Surface
- Unimproved Road
- Trail
- National Recreation Trail
- Railroad
- Toiyabe National Forest
- Toiyabe National Forest Wilderness
- Bureau of Land Management Lands
- Indian Reservations
- Other Federal Lands
- State Public Use Lands
- District Ranger Office
- Other Forest Service Facility (Report Fires Here)
- NDF Fire Station
- Permanent Lookout Station
- Information Center
- Horizontal Control Station
- Located or Landmark Object
- Gaging Station
- Mining Activity
- Gravel Pit
- House, Cabin or other Building
- School, Church
- Cemetery
- Recreation Site, National Forest

TOWNSHIP AND SECTION LINE CLASSIFICATION

- Surveyed, location reliable
- Surveyed, location approximate

Public lands outside the National Forest Boundary were compiled from BLM land status maps. Check with the appropriate agency for current land status information. Public lands are subject to changes and leasing. Local inquiry should be made before entering.

The Forest Service, U.S. Department of Agriculture, is committed to the policy that all persons shall have access to its programs, facilities, and employment without regard to race, religion, color, sex, age, or national origin.

FOREST SERVICE MAP
Compiled and constructed through automated methods in the Regional Office, Ogden, Utah, in 1989, from U.S. Geological Survey 1:100,000-scale digital line graph data, USDA Forest Service Primary Base Series quadrangles, U.S. Geological Survey 1:24,000-scale quadrangles and other source data. Revised information not field checked.

Recreation Site Information

SITE NUMBER	SITE NAME	MAP LOCATION	SEASON OF USE	CAMPING UNITS	TRAILER OR FAMILY UNITS	ELEVATION (METERS)	ACTIVITIES AND FACILITIES	REMARKS
1	BONANZA TRAILHEAD	D-2	Jan-Dec			2470		Accesses Bonanza Trail.
2	MACKS CANYON SNOWMOBILE	D-3	Dec-Mar			2320		No facilities.
3	DESERT VIEW OVERLOOK	D-3	Jan-Dec			2500		Accesses paved interpretive trail.
4	OLD MILL PICNIC AREA	D-3	May-Oct	61	13	2530		Group units for 2-3 families.
5	OLD MILL X-C SKI AREA	D-3	Dec-Apr			2530		No facilities.
6	LEE CANYON SKI AREA	D-3	Nov-Mar			2530		Equipment rental, 3 lifts.
7	FOXTAIL GROUP P.A.	D-3	May-Oct		3	2530		24-42 vehicle max.
8	FOXTAIL SNOWPLAY AREA	D-3	Dec-Mar		3	2530		Day use only. No dogs.
9	BRISTLECONE LOOP TRAILHEAD	D-3	Jan-Dec			2620		Access to Bristlecone Trail.
10	DOLOMITE CAMPGROUND	D-3	May-Oct	31		2590		Flush toilets.
11	McWILLIAMS CAMPGROUND	D-3	May-Oct	31	9	2590		Group units for 2-3 families.
12	LEE CANYON RV CAMP	D-3	May-Oct		2	2590		No facilities. Self contained only. 40 vehicle max.
13	DEER CREEK PICNIC AREA	E-3	Jan-Dec	8		2500		Walk-in area (¼ mile). No groups.
14	MAHOGANY GROVE GROUP P.A.	E-3	May-Oct		4	2440		6-12 vehicle max.
15	MT. CHARLESTON NORTH TRAILHEAD	E-3	Jan-Dec			2500		Accesses National Rec. Trail to Mt. Charleston.
16	HILLTOP CAMPGROUND	E-3	May-Oct	36		2560		No trailers or large RV's.
17	MARY JANE TRAILHEAD	D-3	Jan-Dec			2410		Accesses Mary Jane and Big Falls Trails.
18	TRAIL CANYON TRAILHEAD	D-3	Jan-Dec			2410		Accesses trail to Mt. Charleston.
19	CATHEDRAL ROCK PICNIC AREA	D-3	May-Oct	75		2320		Accesses National Rec. Trail, often crowded.
20	CATHEDRAL ROCK GROUP P.A.	D-3	May-Oct		2	2320		7 & 15 vehicle max.
21	FLETCHER VIEW CAMPGROUND	E-3	May-Oct	12		2160		
22	KYLE CANYON RV CAMP	E-3	May-Oct		1	2320		No facilities. Self contained only. 15 vehicle max.
23	KYLE CANYON CAMPGROUND	E-3	May-Oct	19	6	2160		Group units for 2-3 families.
24	GRIFFITH PEAK TRAILHEAD	E-4	Jan-Dec			2500		Accesses National Rec. Trail to Mt. Charleston.

KEY TO RECREATION SYMBOLS

- Parking
- Drinking Water
- Hiking Trail
- Campground
- Picnic Area
- Reservations Required
- Reel Rooms
- Fee Required
- Trailhead
- Handicapped
- First Aid
- Trailer Parking Sites
- Interpretive Trail
- Telephone
- Winter Recreation Area
- Cross Country Skiing
- Sledding
- Snowmobiling
- Snowmobile Parking
- Viewing Area
- Mountain Bike Trail
- Food Service

FOR CAMPING RESERVATIONS CALL MISTIX 1-800-283-CAMP

JEAN/GOODSPRINGS NV VICINITY MAP

KYLE CANYON VICINITY MAP

LEE CANYON VICINITY MAP

INDEX TO TOPOGRAPHIC MAPS

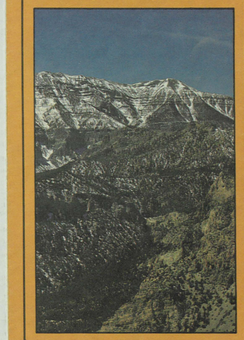
Red lettering indicates Forest Service Primary Base Series Quadrangles
Black lettering indicates U.S. Geological Survey Quadrangles

Topographic maps are available from: Branch of Distribution U.S. Geological Survey, Box 25286, Denver Federal Center Denver, Colorado 80225; (303) 236-7477

DISTRICT RANGER OFFICE VICINITY MAP

Toiyabe National Forest

Las Vegas Ranger District



America's Great Outdoors

Forest Service
United States Department of Agriculture
NEVADA 1991

for more information contact
toiyabe national forest and other public lands

vicinity map

Forest Supervisor
Toiyabe National Forest
1200 Franklin Way
Sparks, Nevada 89431
(702) 331-6444

District Ranger
Las Vegas Ranger District
2881 S. Valley View Blvd., Suite 16
Las Vegas, Nevada 89102-0152
(702) 873-8800 M-F, 8:00 am - 4:30 pm
(702) 222-1597, 24-hour recorded information

Kyle Canyon Guard Station
Kyle Canyon-Highway 157
(702) 872-5486

Bureau of Land Management
Stateline Resource Area
4765 Vegas Drive
P.O. Box 26569
Las Vegas, Nevada 89126
(702) 647-5000

U.S. Fish and Wildlife Service
Desert National Wildlife Refuge
1500 N. Decatur
Las Vegas, Nevada 89108
(702) 646-3401

Nevada State Parks
4747 Vegas Drive
Las Vegas, Nevada 89108
(702) 485-5126

emergency numbers

Highway Patrol . . . . Zenith 1-2000 or (702) 486-4100
Police (Las Vegas Metro) . . . . . (702) 795-3111
Ambulance: (Kyle NDF) . . . . . (702) 872-5483
Report Wildfires to . . . . . (702) 647-5090

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